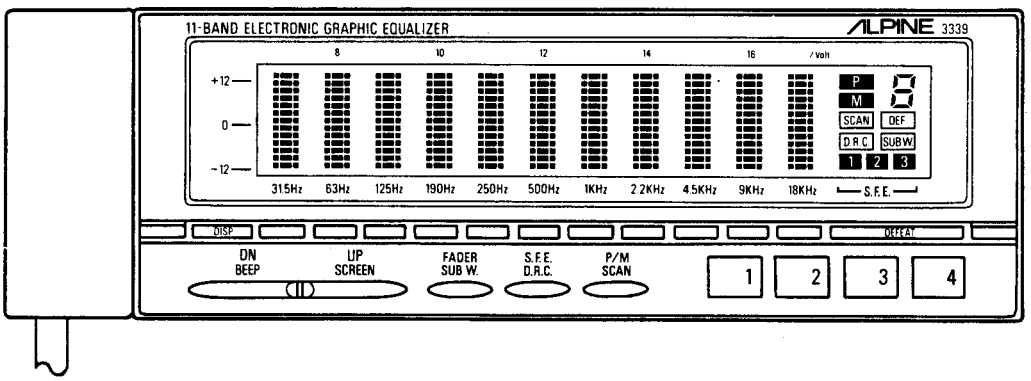
ALPINE SERVICE MANUAL

11-Band Electronic Graphic Equalizer



3339

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Spare Schematic Diagram Inserted.

Specifications

Power Supply	DC 14.4V (11~16V)
Total Harmonic Distortion (0.3V rms / Channel)	0.4%
Input Sensitivity / Impedance	0.5V ± 2dB / 10k ohm
Output Impedance	1k ohm
S / N Ratio (IHF-A)	88dB
Frequency Response	30Hz to 30kHz
Channel Separation	40dB
Current Drain (No Signal)	650mA
Fader Control Effect	40dB
Equalizer Band	31.5Hz, 1kHz, 2.2kHz, 4.5kHz, 9kHz, 18kHz
Frequency Shaping Equalizer Controls	Boost : 12 + 3dB, 12 - 6dB
	Cut : - 12 + 6dB, - 12 - 3dB
Channel Unbalance	0 ± 3dB
Subwoofer Cut-off Frequency	80 ± 25Hz
Subwoofer Control Effect (at 30Hz)	16 ± 4dB
S.F.E. Response	S.F.E. 1 : - 7.5 ± 3dB
	S.F.E. 2 : - 16 ± 3dB
	S.F.E. 3 : - 20 ± 3dB
Semi-Conductors	42 IC's, 61 Transistors, 29 Diodes,
	15 Zener Diodes
Dimensions (Base Unit)	180 (W) × 25 (H) × 150 (D) mm
(Control Unit)	135 (W) × 48 (H) × 23 (D) mm
Weight (Total)	900g

NOTE : Due to continuing product improvement, specifications and designs are subject to change without notice.

FEATURES

- **REMOTE EQUALIZER**
  The 3339 consists of a control unit and a base unit (black box). Only the control unit needs to be accessible by the user. The base unit, connected to the control unit by its communication cable, can be hidden anywhere.

- **OPTIONAL REMOVABLE KIT**
  The 3339 can be made removable using the Alpine 4932 Din-sized, in- dash mounting kit.

- **PREAMP/GRAPHIC EQUALIZER & ACTIVE DIVIDING NETWORK**
  The input signal is divided into several frequency bands for precise adjustment of the frequency response. The signal can be divided into low pass and high pass using the built-in, switchable active dividing network. Front, Rear and Subwoofer outputs are then fed to external signal processors and amplifiers.

- **SPECTRUM ANALYZER**
  The 3339 features a Spectrum display. This display can be configured in a different patterns. Using the "reverse" and/or "negative" mode (page 12) you have 32 possible display configurations. The signal strength (level) of each one of the 11 equalization bands is displayed graphically. This feature provides a visual reference of how a certain source material is recorded and what changes may be necessary in correcting its frequency response deficiencies.

- **SUBWOOFER OUTPUT**
  The 3339's Subwoofer Output is activated when the internal active dividing network is turned on. This makes the front and rear outputs high-pass, crossed over at 80 Hz. The Subwoofer Output is low-pass, also crossed over at 80 Hz. Both high and low pass outputs have a slope of 18 dB per octave.

- **SUBWOOFER LEVEL CONTROL**
  The Subwoofer Output level can be adjusted to compensate for the different sub-bass contents found in various types of source material or different ambient conditions (for example stand-still versus freeway driving).

- **SUBWOOFER PHASE SWITCH**
  Reverses the phase of the Subwoofer Output signal. This feature, when offered with an 18 dB per octave crossover, can prevent suck-out at the crossover point, caused by the phase changes inherent in an active dividing network. Bottom line is better bass in certain applications.

- **SOUND FIELD EXPANDER (S.F.E.)**
  A 3 mode signal processor that enhances the separation between the right and left channels in order to simulate a bigger listening area (beyond the interior of the car).

FEATURES

- **DYNAMIC RANGE CONTROLLER (D.R.C.)**
  Reduces the dynamic range of the signal source (such as CD) in order to overcome road noise or limitations of the rest of the audio system.

- **USER PROGRAMMABLE PRESETS**
  The 3339 has four memory locations that can store equalizer settings for future use.

- **FACTORY SET EQUALIZATION CURVES**
  4 factory presets representing different types of music or broadcasting medium (radio).

- **MEMORY SCAN**
  Cycles through the 8 preset equalization curves (4 user programmable and 4 factory-set).

- **VOLTMETER**
  The 3339 incorporates a voltmeter to monitor voltage changes in the vehicle's electrical system.

- **REMOTE POWER ON/OFF**
  When the head unit is turned on, the equalizer will also turn on automatically. Likewise, when power to the head unit is turned off, the unit will turn off simultaneously.

- **DUAL AMP BALANCER**
  Fader, for controlling the volume balance between the front and rear speakers.

- **24K GOLD-PLATED RCA LINE-LEVEL INPUTS AND OUTPUTS**
  Allow easy system set-up and future expansion using preamp level head units, signal processors and power amplifiers. Gold-plated connectors assure long-lasting, corrosion-free contact for the best possible sound.

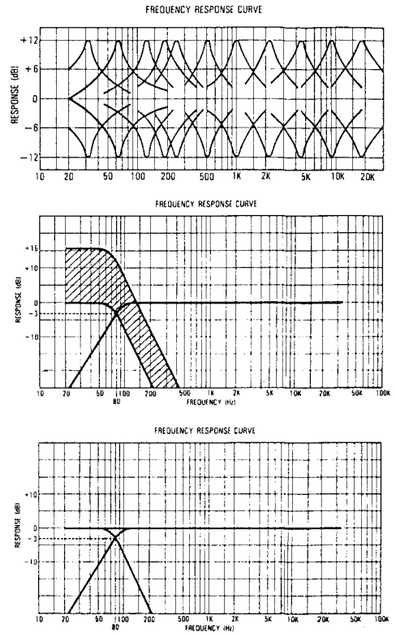
- **DIMMER LEAD**
  When connected to a +12-volt feed from your dash lighting system, the 3339's illumination intensity will dim.

- **OPTIONAL COMMUNICATION CABLE EXTENSION**
  Your authorized Alpine dealer can provide a 10-foot (3 meter) extension cable (Alpine 4912) which goes between the controller and the base unit.

PRECAUTIONS

1. Improper wiring connections could cause damage to your vehicle's electrical system and/or the 3339 equalizer. Carefully follow the wiring instructions in this manual.
2. Attaching the battery lead to the positive (+) terminal of the battery should be the last connection after all other connections are made.
3. Be sure that the 3339 is mounted in a way that will allow for free air circulation and heat dissipation.
4. When changing fuses, be sure to replace the old fuse with one of the same amperage (3A). Use of improper fuses can lead to serious damage to components.

CHARACTERISTIC CURVES



CONTROLS AND INDICATORS

Listed below are all the Controls and their Indicators. Please s
Operation section for details.

① DISP (Display) Button
② Band Selector Buttons
③ DEFEAT Button
④ Preset Buttons
⑤ P/M (Programmable/Manufacturer's Memory) /SCAN Butto

⑥ S.F.E. (Sound Field Expander) /
D.R.C. (Dynamic Range Control) Button
⑦ FADER/SUB W. (Sub Woofer) Button
⑧ Level Control UP/SCREEN Button
⑨ Level Control DN (Down)/BEEP On/Off Button
⑩ Display

⑪ M (Manufacturer) Indicator
⑫ P (Programmable) Indicator
⑬ Preset Number Indicator
⑭ DEF (Defeat) Indicator
⑮ SUB W. Indicator

⑯ S.F.E. (Sound Field Expander) Mode Indicators
⑰ D.R.C. (Dynamic Range Control) Indicator
⑱ SCAN Indicator
⑲ SUBWOOFER ST/MONO (Stereo/Mono) Switch (Base Unit)
⑳ SUBWOOFER PHASE Switch (Base Unit)

㉑ Reset Switch (Base Unit)

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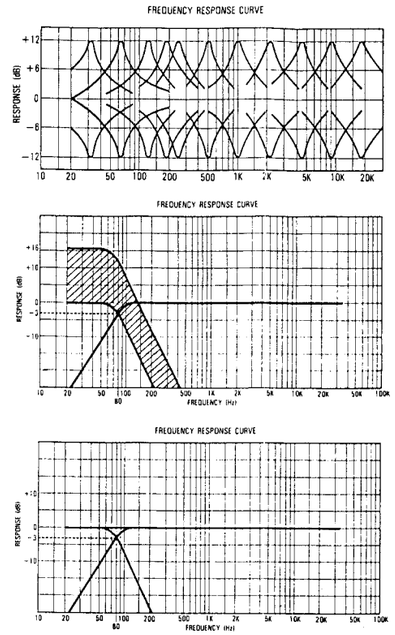

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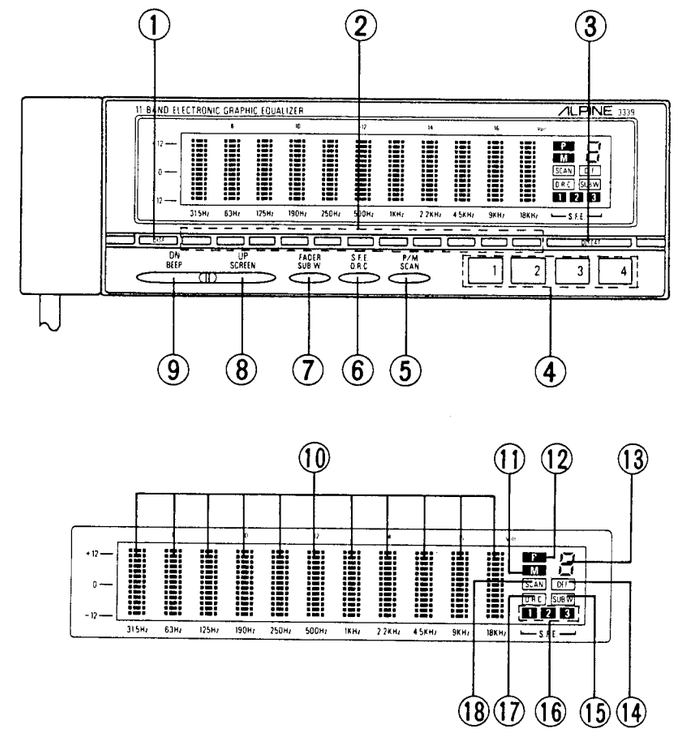
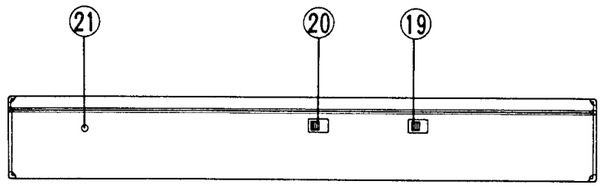
CONTROLS AND INDICATORS

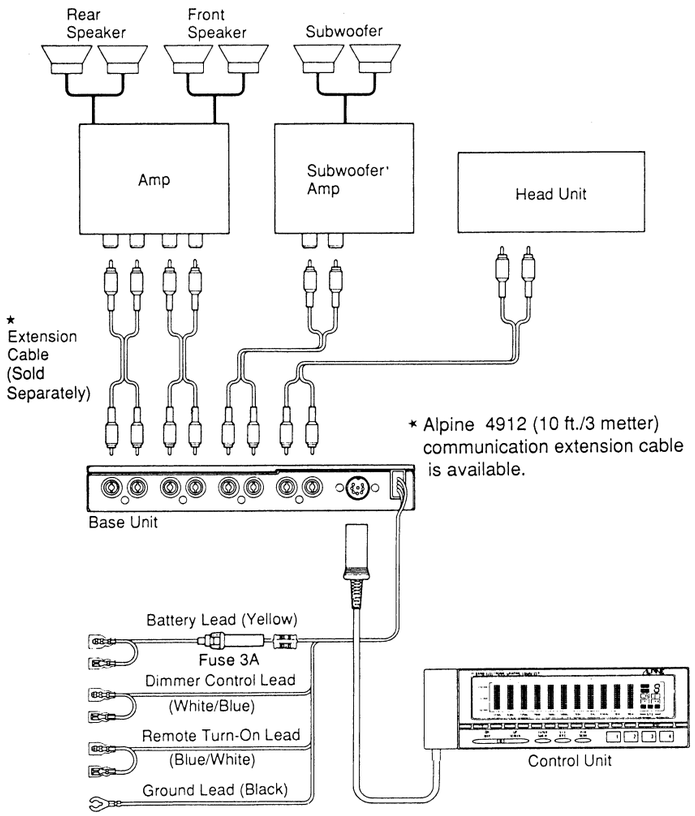
CONTROL UNIT



BASE UNIT



CONNECTIONS



RCA Line Output Connectors
Connect to the Input Connectors of a Signal Processor or Power Amplifier.

RCA Line Input Connectors
Connect to the Output Connectors of the Head Unit.

Ground Lead (BLACK)
Connect this lead to a good chassis ground.

NOTE:
Secure the ground lead of the unit to bare metal on the car chassis using a sheet metal screw. Use an ohmmeter to check continuity from this positive to the negative battery terminal.

Remote Turn-On Lead (BLUE/WHITE)
Connect this lead to the remote turn-on lead of your head unit. Applying (+) 12V to this lead turns on the 3339.

CONNECTIONS

Dimmer Control Lead (WHITE/BLUE)
Applying (+) 12V to this lead decrease the brightness of the display to approximately half of this original intensity. This can be tied into the vehicle's light switch to dim the display at night.

Battery Lead (YELLOW)
Connect this lead to the positive (+) post of the vehicle's battery. Do not use existing wiring in the vehicle as a power source.

INSTALLATION

The 3339 is made up of two components: the Control Unit and the Base Unit.

CONTROL UNIT
As with all installations you should begin by determining the mounting locations for the components of the system.
The Control Unit can be custom mounted flush in the dashboard, center console, sun visor, or other flat surface in the vehicle. The compact size of the Control Unit allows it to be stored in the glove box or center console storage area. There is also an optional 4932 in-dash mounting kit. This allows the Control Unit to be mounted in a DIN opening. Using this kit, the Control Unit can be easily removed and taken with the owner for theft prevention.

● **Velcro™ (Double-Sided Adhesive) Tape Mounting (Fig. A)**
The Control Unit can be mounted to any flat spot using the Velcro™ tape. Choose a location which allows easy access to operate the Control Unit.
1. Remove the adhesive protective paper from one side of the Velcro tape.
2. Attach the exposed adhesive side to the rear side of the Control Unit, in a central location.
3. Select a secure and flat spot for mounting. Make sure the mounting location is clean, dry and free from contaminants.
4. Remove the protective paper from the other side of the Velcro tape.
5. Press the Control Unit to its mounting location.
6. Connect the DIN connector of the Control Unit to the Base Unit.

● **Using the Alpine 4932 In-Dash Mounting Kit (Sold separately) (Fig. B)**
The 4932 has a release button for easy mounting and removal of the Control Unit as an anti-theft measure.
1. Remove the Communication Like Connector from the Control Unit by unscrewing one machine screw. The 4932 has a built-in Connector.
2. Mount the Bracket Support on the Mounting Sleeve.
3. Insert the Mounting Sleeve into dashboard.
4. Connect the DIN connector to the Base Unit.
5. Insert the 4932 into the Mounting Sleeve.
6. Mount the Control Unit to the 4932.

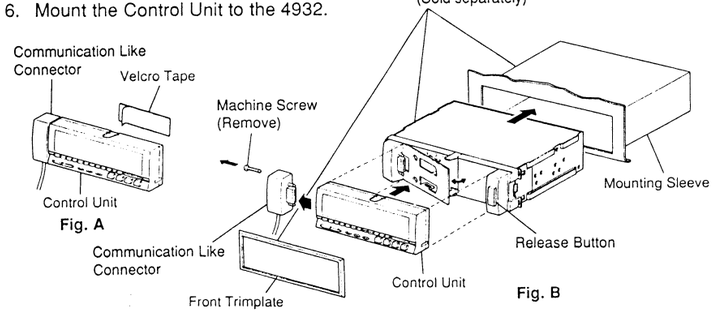


Fig. A

Fig. B

INSTALLATION

BASE UNIT

NOTE:
The reset switch ㉑ on the Base Unit may need to be accessed should t microprocessor "latch-up" due to weak, dead, or disconnected battery. Mak this switch can be easily reached.

The Base Unit can be mounted under the seat or hidden under the dasl using the mounting kit supplied.

● **Using the Mounting Brackets (Supplied) (Fig. C)**

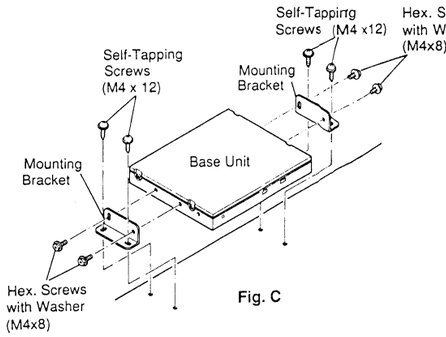


Fig. C

● **Velcro™ Tape Mounting (Fig. D)**

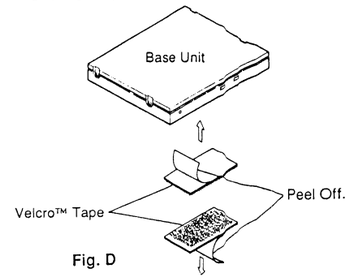


Fig. D

Attach to the car (such as under the dashboard).

IMPORTANT
Please record the serial number of your base unit in the space provided back cover of this manual and keep it as a permanent record. The seria plate is located on the bottom of the base unit.

CONNECTIONS

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4932 into the Mounting Sleeve.
Control Unit to the 4932.

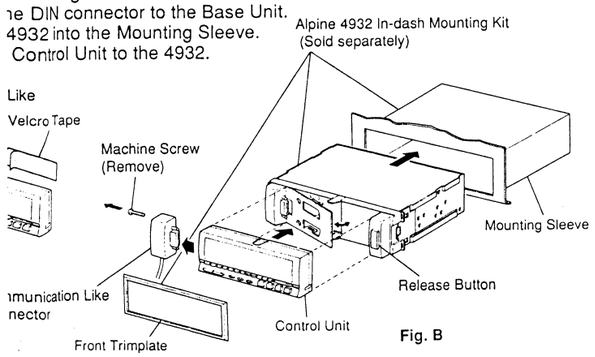


Fig. B

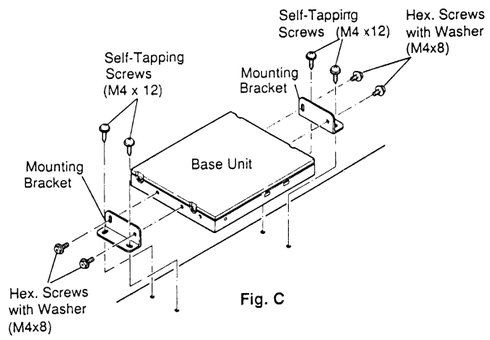
INSTALLATION

BASE UNIT

NOTE:
The reset switch ㉑ on the Base Unit may need to be accessed should the 3339's microprocessor "latch-up" due to weak, dead, or disconnected battery. Make sure this switch can be easily reached.

The Base Unit can be mounted under the seat or hidden under the dashboard using the mounting kit supplied.

● **Using the Mounting Brackets (Supplied) (Fig. C)**



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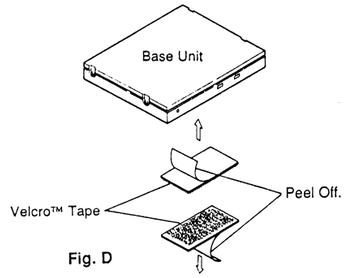


Fig. D

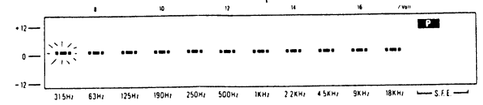
Attach to the car (such as under the dashboard).

IMPORTANT
Please record the serial number of your base unit in the space provided on the back cover of this manual and keep it as a permanent record. The serial number plate is located on the bottom of the base unit.

OPERATION

NOTE:
There is the reset switch on the Base Unit (㉑ on page 6). This switch may have to be pressed after the unit is first installed or if the vehicle's battery is disconnected or becomes weak.

Adjusting the Equalizer
1. Select the band you wish to adjust by pressing one of the band selector buttons ②. For example, when the 31.5 Hz button is pressed, the display for the 31.5 Hz band flashes for approximately 5 seconds.



2. Press the Level Control UP ⑧ or DN ⑨ button to adjust to the desired level while the display is flashing.
3. Repeat the above steps to adjust the other bands.

Setting the User-Programmable Equalization Presets
1. Make sure the P indicator ⑫ is lit. If not, press and release the P/M button ⑤ until the P indicator ⑫ appears in the display.
2. Set your desired equalization curve using the Band Selector buttons ② and the UP ⑧ and DN ⑨ level controls as previously explained in the "Adjusting the Equalizer" section.
3. Press and hold any one of the preset buttons ④ for 2 seconds. The display will flash for 5 seconds which indicates the unit is ready to store the new equalization curve.
4. Within 5 seconds (while the display is flashing) press the preset button ④ that corresponds to the preset memory location in which the new equalization curve is to be placed. Your custom equalization curve is now stored in memory.
   Note: This procedure will erase the information previously stored in that preset memory location.
5. Repeat steps 1 – 4 above to create and memorize other equalization curves.

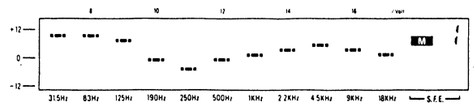
Selecting the User-Programmable Presets
1. Press the preset button which corresponds to the custom equalization curve you desire.
2. The preset memory location number and equalization curve will appear in the display.

OPERATION

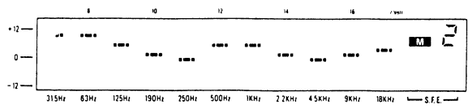
Manufacturer's Equalization Presets

For your convenience, we have provided 4 typical equalization settings for different types of source material. These settings have been preset into memory at the factory as follows:

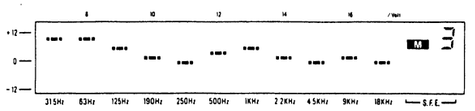
1 Radio Broadcast Music



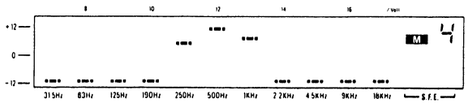
2 Male Vocalist



3 Female Vocalist



4 Radio Broadcast News.



Selecting the Manufacture's Equalization Presets

1. Select and play back your desired music category, male vocalist for example.
2. Make sure the M indicator ⑪ is lit. If not, press and release the P/M button ⑤ until the M indicator ⑪ appears in the display.
3. Press the preset number that corresponds to the type of source material you have chosen. In this case, press preset number 2.
4. Now the male vocalist preset is activated and the equalization characteristics that best suit male vocals are shown in the display.

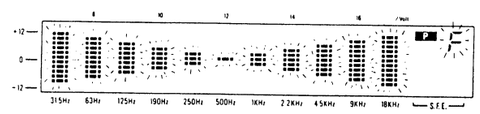
OPERATION

Fader Adjustment

This feature allows you to adjust the sound level between the front and rear speakers.

1. Press the FADER button ⑦ once to activate the fader control mode. A "F" will appear ⑬ and the display ⑩ will flash.
2. Press the level control UP ⑧ and DN ⑨ buttons to adjust the front and rear output levels.

When the UP button ⑧ is pressed, the front level is emphasized (and the rear level is attenuated). When the DN button ⑨ is pressed, the rear level is emphasized (and the front level is attenuated)

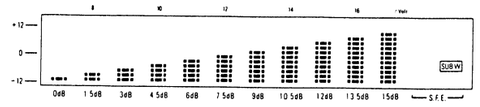


NOTE:

The fader control mode will be deactivated automatically if no adjustments are made for 5 seconds. In this case, press the FADER button ⑦ again to activate the fader control mode again.

Subwoofer Output

1. To activate the Subwoofer Output, press and hold the SUB W. button ⑦ for more than 2 seconds. The SUB W. indicator ⑮ will light up.
2. To adjust the Subwoofer level, press and release the SUB W. button ⑦ until the SUB W. indicator ⑮ begins to flash.
3. Press the Level Control UP ⑧ or DN ⑨ button to adjust the Subwoofer Output to your desired level.



Using the S.F.E. (Sound Field Expander)

This feature expands the sound field in order to simulate a larger (than the vehicle's interior) listening area. You may choose from 3 modes which provide different levels of separation.

1. Press and release the S.F.E. button ⑥ to activate the S.F.E. mode. No. 1 of the S.F.E. select indicators ⑯ will light up.
2. Press and release the S.F.E. button ⑥ again to select No. 2, or 3.
3. While in mode 3, press and release the S.F.E. button ⑥ once more to deactivate this feature.

OPERATION

D.R.C. (Dynamic Range Control)

1. Press and hold down the D.R.C. button ⑥ for 2 seconds or lo
   D.R.C. indicator ⑰ will light up. This feature reduces the dyna
   of the signal source (such as CD) in order to overcome road r
   limitations of the rest of the audio system.

Use this function when listening to source material with a very dynamic range such as a classical music passage.

Preset SCAN

1. Press and hold down the SCAN button ⑤ for 2 seconds or lon
   SCAN indicator ⑱ will light up.
2. This will scan the equalization curves stored in preset memory
   onds each in the order of 1 to 4 for the user-programmable pr
   then 1 to 4 for the manufacturer's presets.

The scanning will be deactivated automatically when this proc finished. It can also be stopped by momentarily pressing the SCA second time when you have reached your desired preset curve.

DEFEAT Button

1. Press and release the DEFEAT button ③ to bypass the equali
   and directly output the original signal. The DEF indicator ⑭ w
2. To deactivate this function, press and release the DEFEAT bu

Changing the Display

1. Press and hold down the DISP button ① for more than 2 secor
   select the normal or reverse mode.
2. Press the UP button ⑧ for more than 2 seconds to select the p
   the negative display.
3. Press and release the DISP button ① repeatedly to select the
   display mode from among the 11 possible selections. When th
   button ① is pressed, one of the numbers 1 through 11 is displa
   about 3 seconds on display ⑩. Then the pattern of that numbe
   played.

   1) Display "1" is the equalizer's graphic representation.
   2) Display "2-9" are different spectrum display patterns.
   3) Display "10" is the battery voltage level indicator.
   4) Display "11" repeatedly scans the patterns "2-9" for approxim
      seconds each.

OPERATION

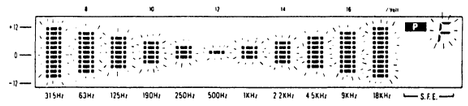
ıdjustment

feature allows you to adjust the sound level between the front and ɜakers.

s the FADER button ⑦ once to activate the fader control mode. A ɣill appear ⑬ and the display ⑩ will flash.

s the level control UP ⑧ and DN ⑨ buttons to adjust the front and output levels.

n the UP button ⑧ is pressed, the front level is emphasized (and the ɐl is attenuated). When the DN button ⑨ is pressed, the rear level is ɪized (and the front level is attenuated)



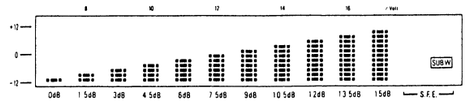
ɟader control mode will be deactivated automatically if no adjustre made for 5 seconds. In this case, press the FADER button ⑦ activate the fader control mode again.

ɔfer Output

ɔtivate the Subwoofer Output, press and hold the SUB W. button ⑦ ɹore than 2 seconds. The SUB W. indicator ⑮ will light up.

djust the Subwoofer level, press and release the SUB W. button ⑦ the SUB W. indicator ⑮ begins to flash.

ɜ the Level Control UP ⑧ or DN ⑨ button to adjust the Subwoofer ut to your desired level.



ıe S.F.E. (Sound Field Expander)

feature expands the sound field in order to simulate a larger (than ɔle's interior) listening area. You may choose from 3 modes which different levels of separation.

ɜ and release the S.F.E. button ⑥ to activate the S.F.E. mode. No. 1 ɜ S.F.E. select indicators ⑯ will light up.

ɜ and release the S.F.E. button ⑥ again to select No. 2, or 3.

ɜ in mode 3, press and release the S.F.E. button ⑥ once more to tivate this feature.

OPERATION

D.R.C. (Dynamic Range Control)

1. Press and hold down the D.R.C. button ⑥ for 2 seconds or longer. The D.R.C. indicator ⑰ will light up. This feature reduces the dynamic range of the signal source (such as CD) in order to overcome road noise or limitations of the rest of the audio system.

Use this function when listening to source material with a very wide dynamic range such as a classical music passage.

Preset SCAN

1. Press and hold down the SCAN button ⑤ for 2 seconds or longer. The SCAN indicator ⑱ will light up.
2. This will scan the equalization curves stored in preset memory for 5 seconds each in the order of 1 to 4 for the user-programmable presets and then 1 to 4 for the manufacturer's presets.

The scanning will be deactivated automatically when this procedure is finished. It can also be stopped by momentarily pressing the SCAN button a second time when you have reached your desired preset curve.

DEFEAT Button

1. Press and release the DEFEAT button ③ to bypass the equalizer circuitry and directly output the original signal. The DEF indicator ⑭ will light up.
2. To deactivate this function, press and release the DEFEAT button again.

Changing the Display

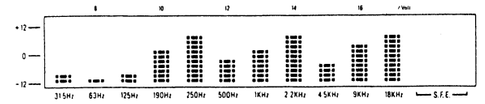
1. Press and hold down the DISP button ① for more than 2 seconds to select the normal or reverse mode.
2. Press the UP button ⑧ for more than 2 seconds to select the positive or the negative display.
3. Press and release the DISP button ① repeatedly to select the desired display mode from among the 11 possible selections. When the DISP button ① is pressed, one of the numbers 1 through 11 is displayed for about 3 seconds on display ⑩. Then the pattern of that number is displayed.

   1) Display "1" is the equalizer's graphic representation.
   2) Display "2-9" are different spectrum display patterns.
   3) Display "10" is the battery voltage level indicator.
   4) Display "11" repeatedly scans the patterns "2-9" for approximately 5 seconds each.

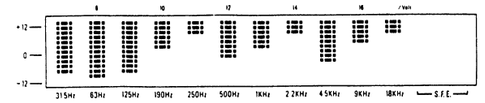
OPERATION

Display Examples

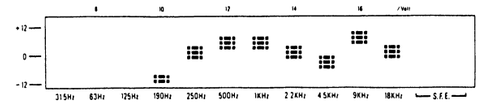
Pattern 2, Normal Mode (Positive)



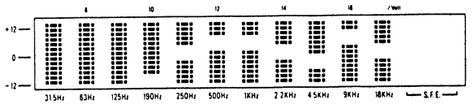
Pattern 2, Reverse Mode (Positive)



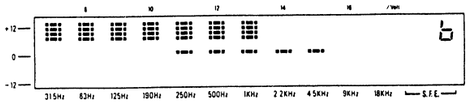
Pattern 6, Normal Mode (Positive)



Pattern 6, Normal Mode (Negative)



Pattern 10, Battery Status (Positive)



When the voltage is in the proper range (between 11 and 15 volts), it will be indicated on the display in orange.

Stereo/Mono Switch

When the ST/MONO switch ⑲ is set to the MONO position, only the subwoofer output becomes mono.

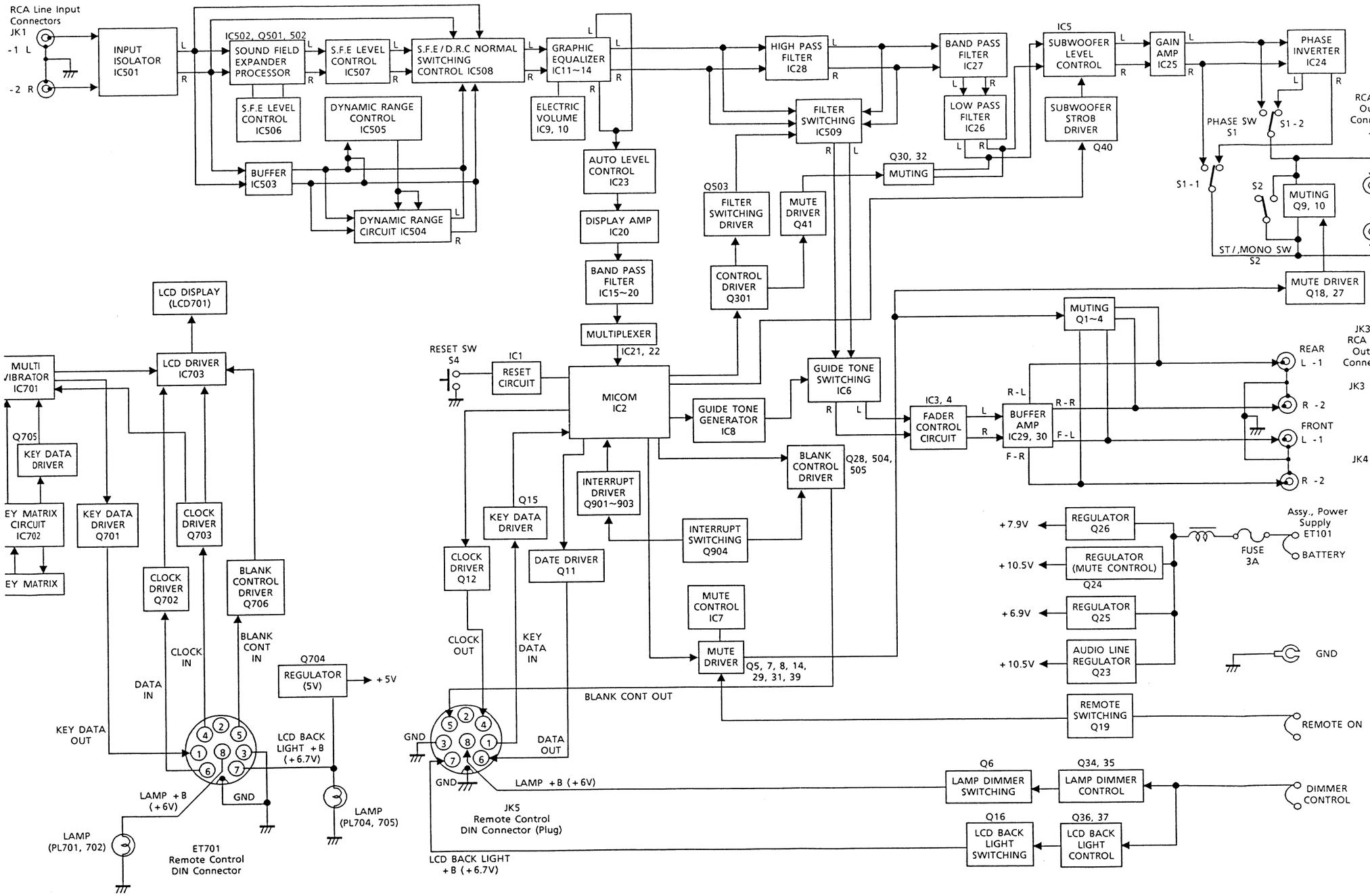
Phase Switch

When the PHASE switch ⑳ is set to the 180 degrees position, the phase of the subwoofer output is inverted.

Beep On/Off Button

The 3339 may be programmed to beep each time its operation mode is changed (including automatic functions such as Preset Scan and manual functions engaged by pressing a button). Press and hold the BEEP button ⑨ for more than 2 seconds to turn the beep verification on or off.

lock Diagram



Disassembly In

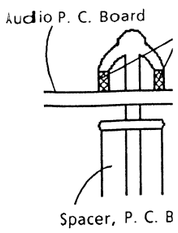
<Base Unit>

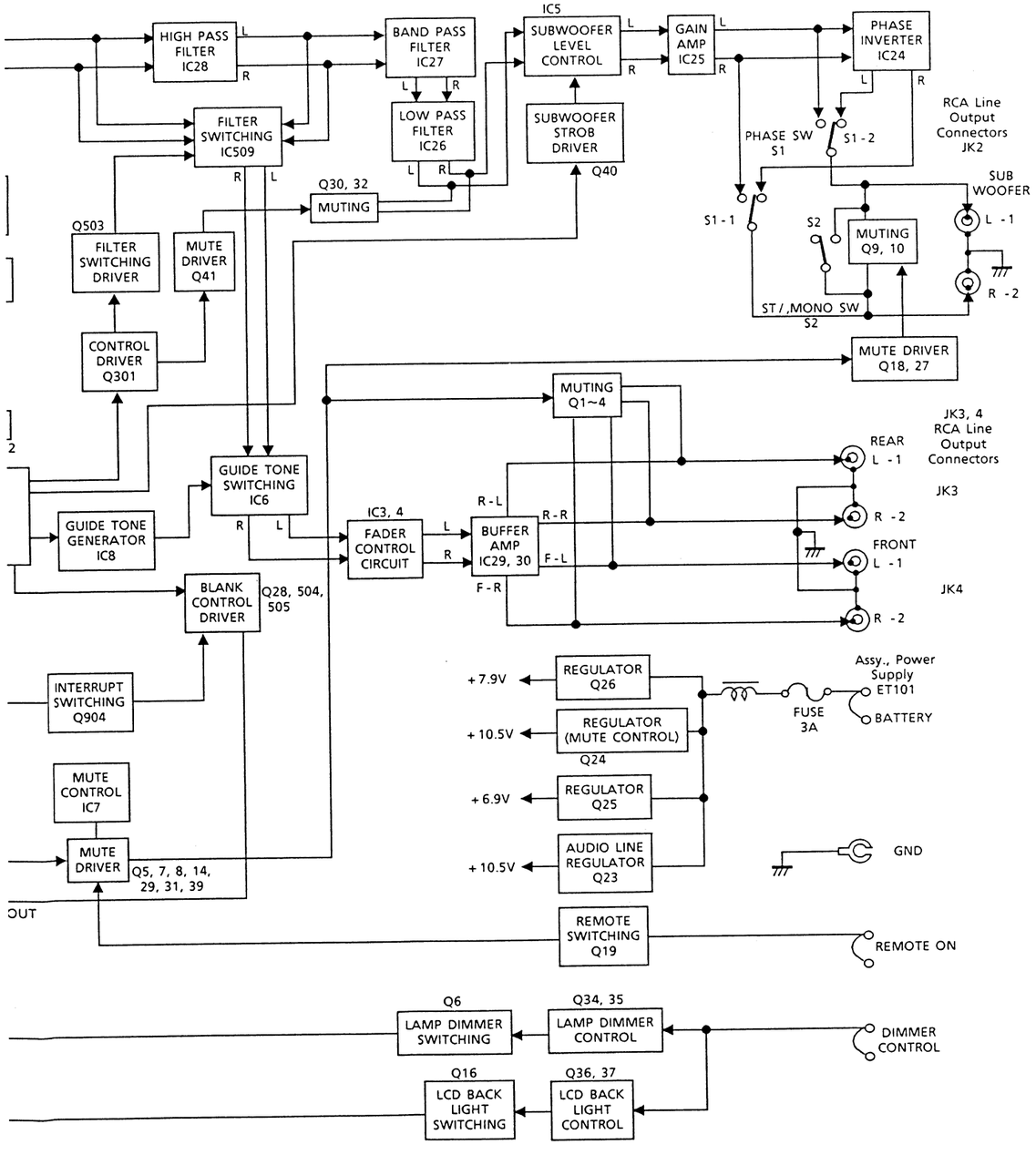
1. Removal of Main P. C. E

(1) After removal of Top Cover, marked "○" as shown in Fi
(2) Disconnect all connectors fro
(3) The Main P. C. Board can be Audio P. C. Board.

2. Removal of Audio P. C.

(1) Hold down "A" (see Figure Spacer, P. C. Board as shown
(2) Disconnect all connectors fro
(3) The Audio P. C. Board can b Main P. C. Board.



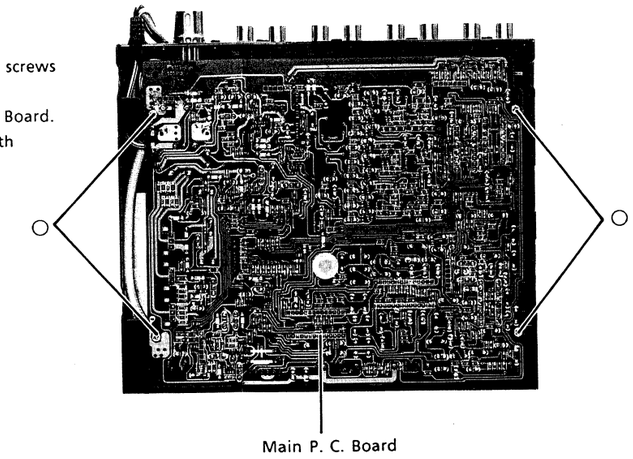


Disassembly Instructions

<Base Unit>

1. Removal of Main P. C. Board

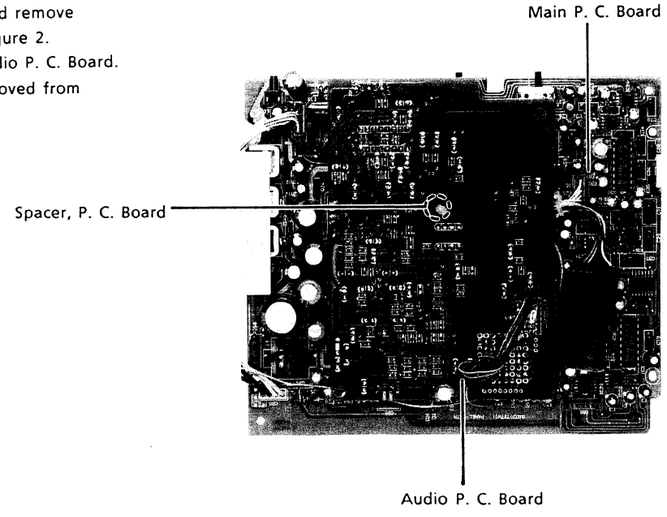
(1) After removal of Top Cover, remove four screws marked "○" as shown in Figure 1.
(2) Disconnect all connectors from Main P. C. Board.
(3) The Main P. C. Board can be removed with Audio P. C. Board.



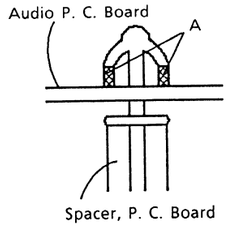
<Figure 1>

2. Removal of Audio P. C. Board

(1) Hold down "A" (see Figure 3), and remove Spacer, P. C. Board as shown in Figure 2.
(2) Disconnect all connectors from Audio P. C. Board.
(3) The Audio P. C. Board can be removed from Main P. C. Board.



<Figure 2>



<Figure 3>

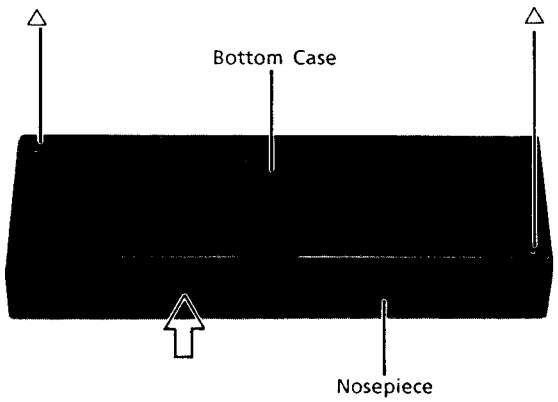
<Control Unit>

1. Removal of Nosepiece

(1) Remove two screws marked "△" as shown in Figure 4.
(2) Depress two places in the directions of the arrows as shown in Figure 4 and 6.

Note : Be careful there are four hooks (see Figure 6) at keep out of sight.

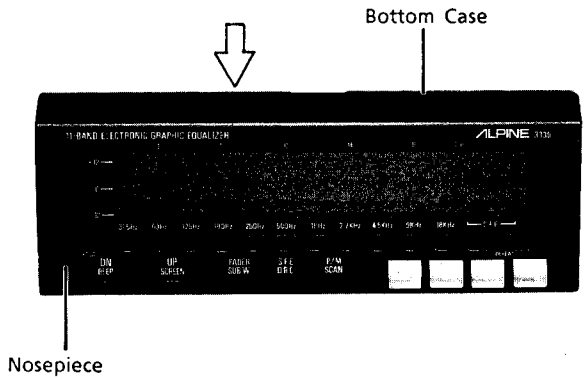
(3) the Nosepiece can be removed.



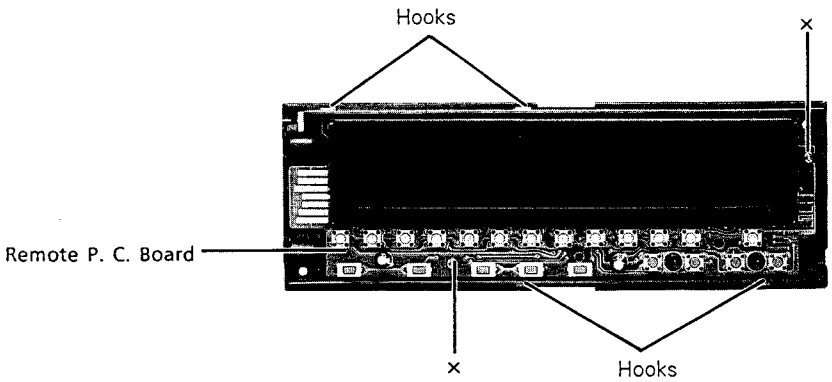
<Figure 4>

2. Removal of Remote P. C. Board

(1) After removal of nosepiece, remove two screws marked "×" as shown in Figure 6.
(2) The Remote P. C. Board can be removed.



<Figure 5>



<Figure 6>

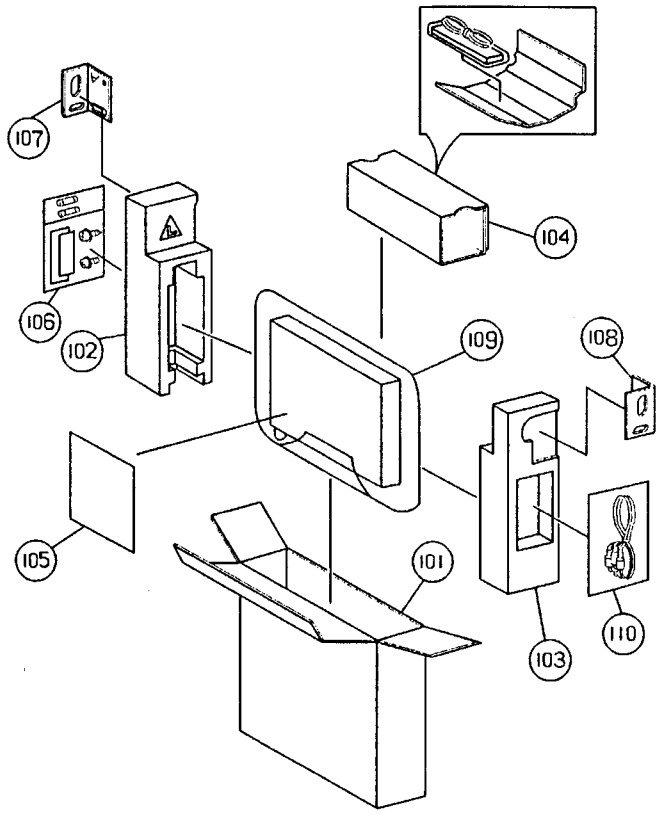
Packing Assembly Parts List

Symbol No.		Part No.	Description
	101	56S20232W32	Carton, Packing (Individual)
	102	56D21248W01	Tray, Packing (L)
	103	56D21248W02	Tray, Packing (R)
	104	56B21249W01	Pad, Packing
○	105	68P10791W75	Owner's, Manual
●	105-1	68P10791W75	Owner's, Manual
●	105-2	68P22493W05	Owner's, Manual
△	105	68P22493W01	Owner's, Manual
	106	01V23900W07	Assy., Kit Instalation
△	106-1	03S40018G16	Screw, Flange (M4×12)
△	106-2	03B44963F01	Bolt, Hex W/Washer (M4×8)
△	106-3	65A40348G04	Fuse (3A)
	107	07B64551F01	Bracket, Side
	108	07B64551F02	Bracket, Side

Symbol No.	Part No.	Description
109	56C40990T22	Sack, Polyethylen
110	28T67347F02	Plug, Audio Cable

Notes: ○ : North American Model Only (AA)
△ : General Foreign Model Only (GA)
● : Canadian Model Only (CA)
Others : Common

Packing Method View

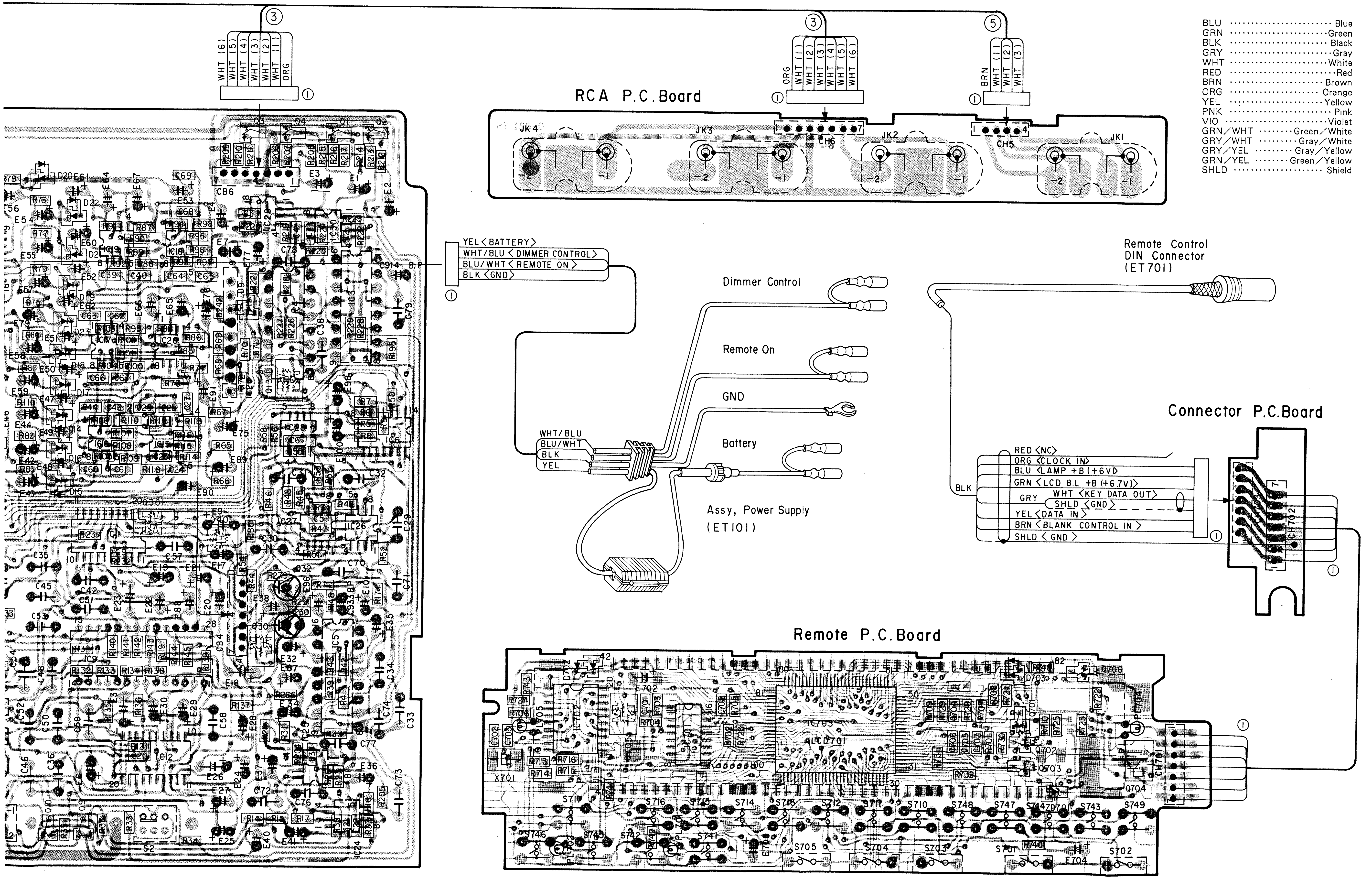


Parts Layout on P. C. Boards and Wiring Diagram

Audio P.C. Board

Main P.C. Board

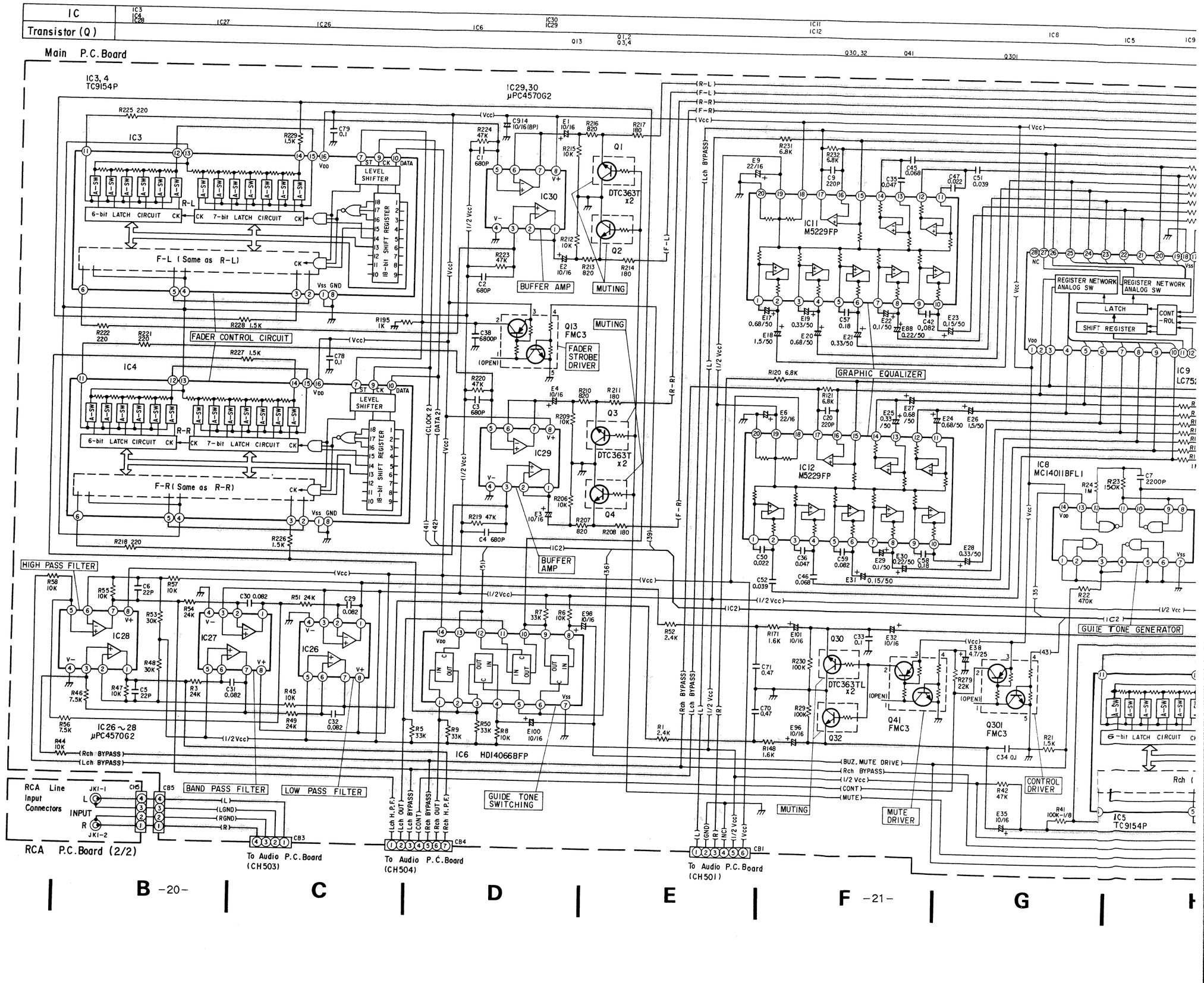
DIN P.C. Board

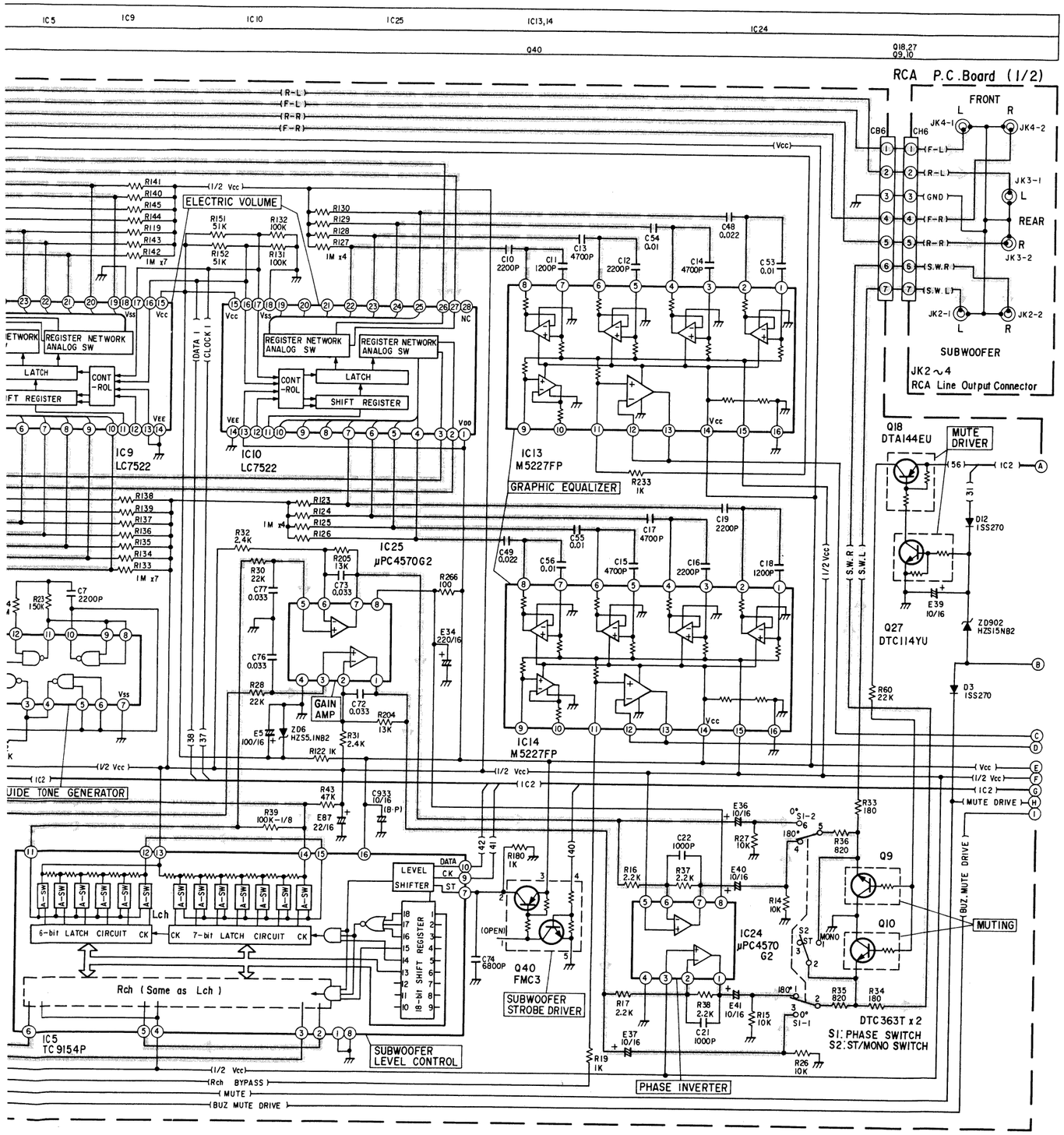

RCA P.C.Board
JK4
JK3
JK2
JK1
CH6
CH5
ORG WHT (1) WHT (2) WHT (3) WHT (4) WHT (5) WHT (6)
BRN WHT (1) WHT (2) WHT (3)
YEL <BATTERY>
WHT/BLU <DIMMER CONTROL>
BLU/WHT <REMOTE ON>
BLK <GND>
Dimmer Control
Remote On
GND
Battery
WHT/BLU
BLU/WHT
BLK
YEL
Assy, Power Supply (ET101)
Remote Control DIN Connector (ET701)
Connector P.C.Board
RED <NC>
ORG <CLOCK IN>
BLU <LAMP +B (+6V)>
GRN <LCD B.L +B (+6.7V)>
GRY WHT <KEY DATA OUT>
SHLD <GND>
YEL <DATA IN>
BRN <BLANK CONTROL IN>
SHLD <GND>
BLK
CH702
CH701
Remote P.C.Board
IC703
LCD701
X701

BLU	Blue
GRN	Green
BLK	Black
GRY	Gray
WHT	White
RED	Red
BRN	Brown
ORG	Orange
YEL	Yellow
PNK	Pink
VIO	Violet
GRN/WHT	Green/White
GRY/WHT	Gray/White
GRY/YEL	Gray/Yellow
GRN/YEL	Green/Yellow
SHLD	Shield

H I J K L M N O

Schematic Diagram (1/3)





	E	C	B
Q1	0V	0V	0V
Q2	0V	0V	0V
Q3	0V	0V	0V
Q4	0V	0V	0V
Q9	0V	0V	1.23V
Q10	0V	0V	1.23V
Q18	5.36V	5.33V	0V
Q27	0V	0V	2.23V
Q30	0V	0V	10.35V
Q32	0V	0V	10.35V

Q13

1	0V
2	10.37V
3	10.41V
4	4.51V
5	0V

Q41

1	0V
2	10.35V
3	10.37V
4	3.61V
5	0V

Q40

1	0V
2	10.31V
3	10.37V
4	4.4V
5	0V

Q301

1	0V
2	9.88V
3	10.38V
4	2.22V
5	0V

IC3

1	0V
2	5.64V
3	5.64V
4	5.51V
5	5.64V
6	5.64V
7	0V
8	0V
9	0V
10	0V
11	5.64V
12	5.64V
13	5.51V
14	5.64V
15	5.64V
16	10.36V

IC6

1	5.82V
2	5.82V
3	5.82V
4	5.43V
5	0V
6	0V
7	0V
8	5.44V
9	5.82V
10	5.82V
11	5.82V
12	10.16V
13	10.16V
14	10.4V

IC4

1	0V
2	5.64V
3	5.64V
4	5.51V
5	5.64V
6	5.64V
7	0V
8	0V
9	0V
10	0V
11	5.64V
12	5.64V
13	5.52V
14	5.64V
15	5.64V
16	10.35V

IC8

1	0V
2	0V
3	10.43V
4	10.43V
5	0V
6	0V
7	0V
8	10.44V
9	10.44V
10	0V
11	10.44V
12	2.61V
13	0V
14	10.44V

IC5

1	0V
2	5.52V
3	5.51V
4	5.52V
5	5.52V
6	5.52V
7	0V
8	0V
9	0V
10	0V
11	5.52V
12	5.52V
13	5.52V
14	5.52V
15	5.52V
16	10.35V

IC13

1	5.48V
2	5.51V
3	5.48V
4	5.51V
5	5.48V
6	5.51V
7	5.51V
8	5.51V
9	
10	
11	5.51V
12	10.46V
13	5.51V
14	0V

IC9

1	10.36V	15	5.18V
2	5.53V	16	0V
3	5.52V	17	0V
4	5.02V	18	0V
5	5.02V	19	5.02V
6	5.02V	20	5.02V
7	5.02V	21	5.02V
8	5.02V	22	5.02V
9	5.02V	23	5.02V
10	5.02V	24	5.02V
11		25	5.02V
12		26	5.52V
13	0V	27	5.52V
14	0V	28	

IC10

1	10.36V	15	5.18V
2	5.53V	16	0V
3	5.52V	17	0V
4	5.02V	18	0V
5	5.02V	19	
6	5.02V	20	
7	5.02V	21	
8		22	5.02V
9		23	5.02V
10		24	5.02V
11		25	5.02V
12		26	5.52V
13	10.37V	27	5.52V
14	0V	28	

IC11

1	5.27V	11	5.28V
2	5.51V	12	5.51V
3	5.27V	13	5.28V
4	5.51V	14	5.51V
5	5.28V	15	5.47V
6	5.51V	16	5.51V
7	5.29V	17	5.51V
8	5.51V	18	10.4V
9	5.29V	19	5.51V
10	5.51V	20	0V

IC12

1	5.27V	11	5.28V
2	5.51V	12	5.51V
3	5.27V	13	5.28V
4	5.51V	14	5.51V
5	5.28V	15	5.47V
6	5.51V	16	5.51V
7	5.29V	17	5.51V
8	5.51V	18	10.4V
9	5.29V	19	5.51V
10	5.51V	20	0V

IC14

1	5.48V
2	5.51V
3	5.48V
4	5.51V
5	5.48V
6	5.51V
7	5.51V
8	5.51V
9	
10	
11	5.51V
12	10.46V
13	5.51V
14	

IC24

1	5.51V
2	5.51V
3	5.51V
4	0V
5	5.51V
6	5.51V
7	5.51V
8	10.41V

IC25

1	5.51V
2	5.51V
3	5.51V
4	0V
5	5.51V
6	5.51V
7	5.51V
8	10.41V

IC26

1	5.51V
2	5.51V
3	5.51V
4	0V
5	5.51V
6	5.51V
7	5.51V
8	10.41V

IC27

1	5.51V
2	5.51V
3	5.51V
4	0V
5	5.51V
6	5.51V
7	5.51V
8	10.41V

IC28

1	5.51V
2	5.51V
3	5.51V
4	0V
5	5.51V
6	5.51V
7	5.51V
8	10.41V

IC29

1	5.51V
2	5.51V
3	5.51V
4	0V
5	5.51V
6	5.51V
7	5.51V
8	10.41V

IC30

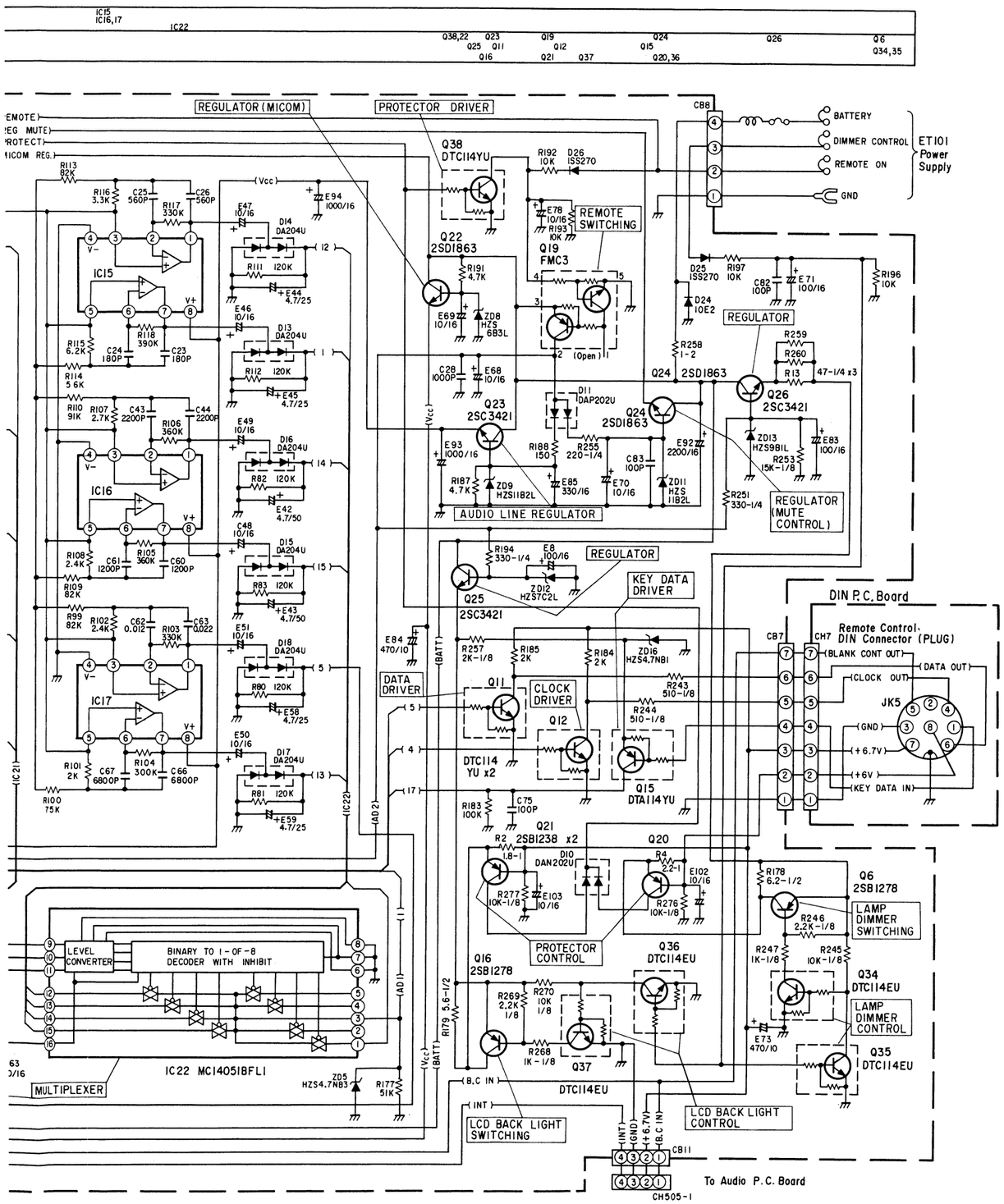
1	5.51V
2	5.51V
3	5.51V
4	0V
5	5.51V
6	5.51V
7	5.51V
8	10.41V

[Measuring Conditions]
- Power Supply Voltage : 14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : No Signal Input

Initial Conditions
Equalizing : Flat
Defeat : OFF
SFR/DRC : OFF
Subwoofer : OFF
Fader : Center

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$

Schematic Diagram (2/3)



	E	C	B
Q5	0V	0V	13.9V
Q6	6.06V	5.95V	5.32V
Q7	0V	3.28V	0V
Q8	0V	13.68V	0V
Q11	0V	2.38V	1.4V
Q12	0V	0.9V	4.45V
Q14	3.29V	0V	3.29V
Q15	4.3V	0V	6.61V
Q16	7.21V	7.13V	6.49V
Q20	5.95V	0V	5.66V
Q21	7.13V	0V	7.13V
Q22	5.37V	13.77V	5.95V
Q23	7.22V	13.77V	7.85V
Q24	10.49V	13.77V	11.03V
Q25	10.41V	13.77V	11.05V
Q26	8.29V	13.77V	8.91V
Q28	0V	9.52V	0V
Q29	0V	13.68V	0V
Q31	13.77V	0V	13.68V
Q34	0V	0V	3.33V
Q35	0V	3.33V	0V
Q36	0V	3.9V	0V
Q37	0V	0V	3.9V
Q38	0V	4.85V	0V
Q39	3.29V	0V	3.28V
Q901	0V	3.9V	0V
Q902	3.25V	3.26V	3.9V
Q903	0V	0V	5.34V
Q904	5.36V	5.34V	4.76V

Q17

1	0V
2	5.29V
3	5.37V
4	10.43V
5	0V

Q19

1	0V
2	13.37V
3	13.77V
4	4.86V
5	0V

IC1

1	5.25V
2	5.25V
3	0V

IC2

1	0V	17	0.54V	33		49	0V
2	0V	18	5.34V	34		50	
3		19	0V	35	0V	51	10.16V
4	2.99V	20	5.34V	36	0V	52	1.58V
5	1.4V	21	4.86V	37	0V	53	1.48V
6		22	1.33V	38	0V	54	1.48V
7		23		39	0V	55	4.65V
8		24		40	0V	56	5.37V
9		25	0V	41	0V	57	0V
10		26		42	3.64V	58	4.65V
11		27	0V	43	2.21V	59	0V
12		28	0V	44	0V	60	0V
13		29	0V	45	0V	61	0V
14	0V	30	0V	46	2.8V	62	0V
15		31	2.77V	47	0V	63	0V
16		32		48	0V	64	3.48V

IC7

1	1.37V
2	3.29V
3	1.37V
4	1.19V
5	0V
6	2.67V
7	0V
8	3.29V
9	0V

IC15

1	5.18V
2	5.2V
3	5.19V
4	0V
5	5.19V
6	5.19V
7	5.18V
8	10.4V

IC16

1	5.18V
2	5.2V
3	5.19V
4	0V
5	5.19V
6	5.19V
7	5.18V
8	10.4V

IC17

1	5.18V
2	5.2V
3	5.19V
4	0V
5	5.19V
6	5.19V
7	5.18V
8	10.4V

IC18

1	5.18V
2	5.2V
3	5.19V
4	0V
5	5.19V
6	5.19V
7	5.18V
8	10.4V

IC19

1	5.18V
2	5.2V
3	5.19V
4	0V
5	5.19V
6	5.19V
7	5.18V
8	10.4V

IC20

1	5.18V
2	5.2V
3	5.19V
4	0V
5	5.19V
6	5.19V
7	5.18V
8	10.4V

IC21

1	0V
2	
3	0V
4	
5	0.39V
6	0V
7	0V
8	0V
9	0V
10	0V
11	0V
12	0V
13	0V
14	0V
15	0V
16	10.41V

IC22

1	0V
2	
3	0V
4	
5	
6	0V
7	0V
8	0V
9	0V
10	0V
11	0V
12	0V
13	0V
14	0V
15	0V
16	10.41V

IC23

1	1.83V
2	0V
3	1.83V
4	0V
5	0V
6	9.79V
7	
8	
9	

[Measuring Conditions]
- Power Supply Voltage : 14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : No Signal Input
  Initial Conditions
  Equalizing : Flat
  Defeat : OFF
  SFE/DRC : OFF
  Subwoofer : OFF
  Fader : Center

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Schematic Diagram (3/3)

IC	IC701	IC703 IC702	IC501	IC509	IC502	IC505 IC503	IC506	IC507	IC504
Transi Stor (Q)	Q702 Q706 Q705	Q703,Q704,Q701	Q501 Q502 Q503						

Remote P.C.Board

LCD701

SEG41 ~ SEG80

SEG1 ~ SEG40

(48)—(COM-A)

(49)—(COM-B)

BLANK CONTROL DRIVER

Q706 DTA114YU

D703 DAN202U

REGULATOR (5V)

R748 10K

R710 10K

80 – OUTPUT SEGMENT DRIVER

80 – CH DATA SELECTOR

(A) 80-bit LATCH

(B) 80-bit LATCH

(A) 80-STAGE SHIFT REGISTER

(B) 80-STAGE SHIFT-REGISTER

Remote Control DIN Connector ET701

(CLOCK IN) (KEY DATA OUT) (DATA IN) (GND) (LAMP +B) (LCD BACK LIGHT) (GND) (BLANK CONT IN)

Q702 DTA114YU DATA DRIVER

Q704 2SD1664

R730 510 C706 100P R725 2K C705 100P R708 2K R707 2K R723 1K E704 10/16 ZD701 RD5.6MB2

CH703 CH701 CH702

(BC IN) (DATA IN) (GND) (KEY OUT) (+6.7V) (+6V) (CLOCK)

Connector P.C. Board

Q703 DTA114YU

R722 10K R724 510 R726 2K Q701 DTC114YU R721 10K

CLOCK DRIVER

KEY DATA DRIVER

R729 1M C704 5600P R728 100K R709 22K

OSC 1/4 or 1/8 1/2 COMMON DRIVER SYNC CIRCUIT

IC703 MSM5265FP

SEG1 SEG40

COM-A COM-B

R733 510

R732 510 C707 100P C708 0.022 R705 91K R701 2K

Enable Vref1 Vref2 CONTROL OUTPUT LATCH RESET LATCH

PL701 PL702 PL704 PL705

6V–70mA x2 6.7V–85mA x2

MULTI VIBRATOR

Q705 FMC3

E705 10/16 R704 2K R703 100K C701 1000P

IC701 μPD4538BG

D702 DAN202U R727 1K E702 4.7/6.3 R706 1K

KEY MATRIX CIRCUIT

IC702 μPD6121G

KI0 KI1 KI2 KI3

KO0 KO1 KO2 KO3 KO4 KO5

R713 R714 R715 R716 200K x4

KEY INPUT KEY INPUT/OUTPUT CIRCUIT

TIMING GENERATOR CUSTOM CODE ROM DATA REGISTER DIVIDER OSC CONTROL CIRCUIT OUTPUT CIRCUIT

X701 455KHz C702 220P C703 220P

LCD DRIVER

2 (KI3) S742 | 1 (KI2) S741 | DOWN S702 | UP S701 (KI1) | (KI0)

4 S746 | 3 S745 | F1 S744 | F0 S743 (KO0)

DISP S749 | F3 S748 | F2 S747 (KO1)

FADER/SUB-W S703 | F5 S711 | F4 S710 (KO2)

P/M/SCAN S705 | S.F.E./D.R.C S704 | F7 S713 | F6 S712 (KO3)

DEFEAT S717 | F10 S716 | F9 S715 | F8 S714 (KO4)

R743 10K R742 10K R741 10K R740 10K (KO5)

To Main P.C.Board (CB3)

CH503 (R) (R GND) (L GND) (L)

Audio P.C.Board

ZD501 HZS6.8NB2 E547 220/10 E531 220/10

Q501,502 2SC4081

SOUND FIELD EXPANDER PROCESSOR IC502 μPC4570G2

S.F.E. MIX CONTROL

IC506, 507 MC14066BFEL

E501 10/16 E503 10/16 R501 10K R503 10K C501 22P R505 10K E505 1/50 R507 10K

R513 1K R509 100K R511 68K R565 1.5K R512 68K R564 1K R510 100K R566 160

E543 0.1/50 R515 3.6K R521 10K R543 5.1K R519 2.2K C505 100P

E507 10/16 Q501 R517 2.2K R514 1.5K R518 2.2K R520 2.2K

E508 10/16 Q502 R544 5.1K C506 100P E542 0.1/50

E504 10/16 R504 10K R508 10K E506 1/50 C502 22P R502 10K R506 10K

IC501 M5238FP INPUT ISOLATOR

R516 3.6K R522 10K BUFFER

C523 10/16(B.P) R549 680 R550 2.2K R555 5.1K R554 5.1K R553 5.1K R552 5.1K

S.F.E. LEVEL CONTROL IC507

(Vcc) (1/2Vcc)

E529 100/10

FILTER SWITCHING

IC509 HD14066BFP

E536 10/16 R573 R574 R576 33K x3 E534 22/10

IC503 R525 1.3K R527 47K R529 3.3K R577 4.7K R579 4.7K C539 10/16(B.P)

E509 10/16 R531 47K R532 47K E511 2.2/50 E515 1/50 C509 2200P

DIODE VARIABLE GAIN CELL

R572 10K R526 1.3K R528 47K E522 220/10 IC505 R530 3.3K

E533 22/10 R571 R570 R569 33K x3 E535 10/16 R575 10K Q503 DTC114EU

E513 10/16 E514 10/16 E511 10/16 C510 2200P

R568 8.2K R567 330K R585 200K C511 47P E538 1/50 R583 100K R584 1K E548 220/6.3

IC503, 505 μPC457OG2 R581 11K R582 11K

R578 4.7K E516 1/50 E512 2.2/50 R580 4.7K C521 10/16(B.P)

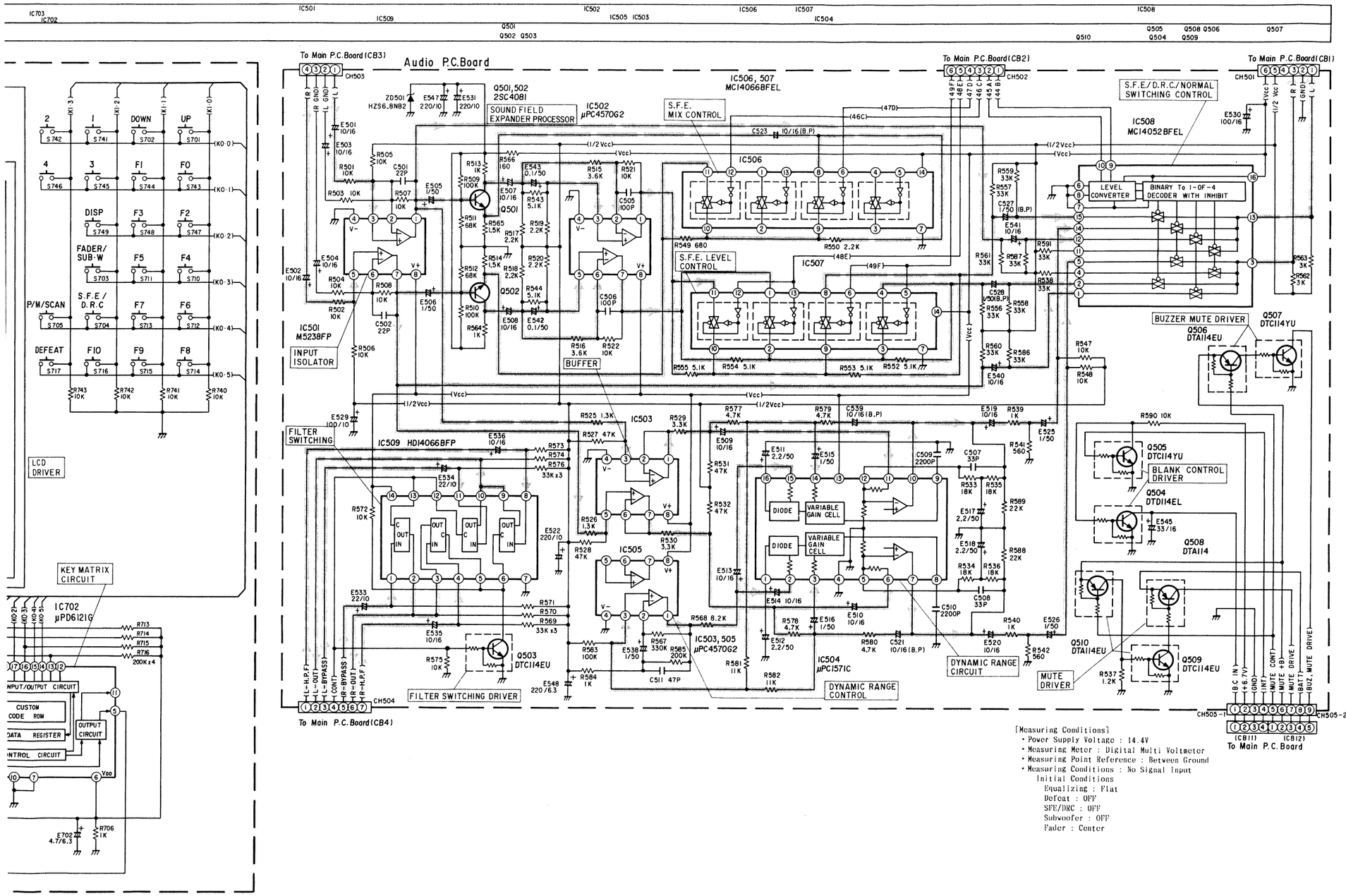
IC504 μPC157IC

DYNAMIC RANGE CONTROL

FILTER SWITCHING DRIVER

(L-H.P.F) (L-OUT) (L-BYPASS) CONT (R-BYPASS) (R-OUT) (R-H.P.F) CH504

To Main P.C.Board (CB4)



	E	C	B
Q501	1.89V	5.58V	2.61V
Q502	1.89V	5.58V	2.61V
Q503	0V	0V	9.88V
Q504	0V	9.54V	0V
Q505	0V	0V	5.34V
Q506	3.29V	0V	3.28V
Q507	0V	0V	0V
Q508	13.78V	0V	13.64V
Q509	0V	13.65V	3.26V
Q510	3.29V	0V	3.28V
Q701	0V	6.62V	0V
Q702	4.93V	1.47V	4.3V
Q703	4.93V	4.28V	1.13V
Q704	4.94V	6.73V	5.54V
Q706	4.93V	0V	9.54V

Q705	
1	4.73V
2	0V
3	4.94V
4	0V
5	0V

IC501	
1	5.49V
2	5.49V
3	5.49V
4	0V
5	5.49V
6	5.49V
7	5.49V
8	10.41V

IC502	
1	5.5V
2	5.5V
3	5.5V
4	0V
5	5.5V
6	5.5V
7	5.5V
8	10.41V

IC503	
1	5.5V
2	5.5V
3	5.5V
4	0V
5	5.5V
6	5.5V
7	5.5V
8	8.93V

IC504	
1	1.06V
2	1.86V
3	1.87V
4	0V
5	1.86V
6	1.86V
7	4.11V
8	1.86V
9	1.86V
10	4.08V
11	1.87V
12	1.87V
13	10.41V
14	1.88V
15	1.86V
16	1.06V

IC505	
1	5.48V
2	5.5V
3	5.5V
4	0V
5	5.5V
6	5.5V
7	5.48V
8	10.41V

IC506	
1	
2	
3	
4	
5	
6	0V
7	0V
8	1.9V
9	1.9V
10	1.9V
11	1.9V
12	0V
13	
14	10.41V

IC507	
1	5.51V
2	5.51V
3	5.51V
4	5.51V
5	0V
6	1.26V
7	0V
8	5.5V
9	5.5V
10	5.5V
11	5.51V
12	0V
13	0V
14	10.41V

IC508	
1	5.51V
2	5.48V
3	5.51V
4	5.48V
5	5.5V
6	0V
7	0V
8	0V
9	0V
10	0V
11	5.48V
12	5.51V
13	5.51V
14	5.5V
15	5.48V
16	10.41V

IC509			
1	5.87V		
2	5.87V		
3	5.87V		
4	5.49V		
5	0V		
6	0V		
7	0V		
8	5.49V		
9	5.87V		
10	5.87V		
11	5.87V		
12	9.88V		
13	9.88V		
14	10.41V		

IC701			
1	0V		
2	4.72V		
3	4.94V		
4	0V		
5	4.94V		
6	0V		
7			
8	0V		
9	0V		
10			
11	4.27V		
12	0V		
13	4.93V		
14	1.7V		
15	0V		
16	4.93V		

IC702			
1	0V	11	
2	0V	12	
3	0V	13	2.55V
4	0V	14	2.55V
5	0V	15	2.55V
6	2.55V	16	2.55V
7	0V	17	2.55V
8	2.54V	18	2.55V
9	2.49V	19	2.55V
10	0V	20	2.55V

IC703

1	1.92V	21	1.92V	41	4.93V	61	1.92V
2	1.92V	22	1.92V	42	0V	62	1.92V
3	1.92V	23	1.92V	43	0V	63	1.92V
4	1.92V	24	1.92V	44	0V	64	1.92V
5	1.92V	25	1.92V	45	2.78V	65	1.92V
6	1.92V	26	1.92V	46		66	1.92V
7	1.92V	27	1.92V	47	2.52V	67	1.92V
8	1.92V	28	1.92V	48	2.21V	68	1.92V
9	1.92V	29	1.92V	49	2.22V	69	1.92V
10	1.92V	30	1.92V	50	0V	70	1.92V
11	1.92V	31	1.14V	51	1.92V	71	1.92V
12	1.92V	32	4.36V	52	1.92V	72	1.92V
13	1.92V	33	1.38V	53	1.92V	73	1.92V
14	1.92V	34		54	1.92V	74	1.92V
15	1.92V	35		55	1.92V	75	1.92V
16	1.92V	36	1.99V	56	1.92V	76	1.92V
17	1.92V	37	2.2V	57	1.92V	77	1.92V
18	1.92V	38	1.58V	58	1.92V	78	1.92V
19	1.92V	39	0V	59	1.92V	79	1.92V
20	1.92V	40	4.93V	60	1.92V	80	1.92V

81	1.92V		
82	1.92V		
83	1.92V		
84	1.92V		
85	1.92V		
86	1.92V		
87	1.92V		
88	1.92V		
89	1.92V		
90	1.92V		
91	1.92V		
92	1.92V		
93	1.92V		
94	1.92V		
95	1.92V		
96	1.92V		
97	1.92V		
98	1.92V		
99	1.92V		
100	1.92V		

[Measuring Conditions]
- Power Supply Voltage : 14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : No Signal Input
  Initial Conditions
  Equalizing : Flat
  Defeat : OFF
  SFE/DRC : OFF
  Subwoofer : OFF
  Fader : Center

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1{,}000{,}000}$

Schematic Diagram (3/3)

IC	
Tramsi Stor (Q)	Q702 Q706 Q705 — Q703,Q704,Q701

IC701 — IC703 IC702 — IC501 — IC509 — Q501 Q502 Q503 — IC502 — IC505 IC503 — IC506 — IC507 IC504

Remote P.C.Board

LCD701

SEG41 ~ SEG80

SEG1 ~ SEG40

(48)—(COM-A)

(49)—(COM-B)

BLANK CONTROL DRIVER

Q706 DTA114YU

D703 DAN202U

REGULATOR (5V)

R748 10K

R710 10K

80 — OUTPUT SEGMENT DRIVER

80 — CH DATA SELECTOR

(A) 80-bit LATCH

(B) 80-bit LATCH

(A) 80 — STAGE SHIFT REGISTER

(B) 80 — STAGE SHIFT-REGISTER

Remote Control DIN Connector ET701

(CLOCK IN) (KEY DATA OUT) (DATA IN) (GND) (LAMP +B) (LCD BACK LIGHT) (GND) (BLANK CONT IN)

Q702 DTA114YU

DATA DRIVER

R730 510

C706 100P

R725 2K

C705 100P

R708 2K

Q704 2SD1664

R723 1K

E704 10/16

R707 2K

R729 1M

C704 5600P

OSC

1/4or1/8

1/2

COMMON DRIVER

R728 100K

R709 22K

SYNC CIRCUIT

IC703 MSM5265FP

CH703

CH701

(BC IN) (DATA IN) (GND) (KEY OUT) (+6.7V) (+6V) (CLOCK)

CH702

Connector P.C. Board

Z0701 RD5.6MB2

Q703 DTA114YU

R722 10K

R726 510

R702 2K

Q701 DTC114YU

CLOCK DRIVER

R721 10K

KEY DATA DRIVER

R701 2K

R705 91K

C708 0.022

C707 100P

R732 510

Enable

Vref1

Vref2

CONTROL

OUTPUT LATCH

S Q R

RESET LATCH

MULTI VIBRATOR

PL701 PL702 PL704 PL705

6V—70mA X2

6.7V—85mA X2

Q705 FMC3

E705 10/16

R704 2K

R703 100K

C701 1000P

IC701 μPD4538BG

(Vdd)

KEY MATRIX CIRCUIT

IC702 μPD6121G

KEY INPUT

KEY INPUT/OUTPUT CIRCUIT

TIMING GENERATOR

CUSTOM CODE ROM

DIVIDER

DATA REGISTER

OSC

OUTPUT CIRCUIT

CONTROL CIRCUIT

X701 455KHz

C702 220P

C703 220P

D702 DAN202U

R727 1K

E702 4.7/6.3

R706 1K

R713 R714 R715 R716 200K x4

2 S742 — 1 S741 — DOWN S702 — UP S701

4 S746 — 3 S745 — F1 S744 — F0 S743

DISP S749 — F3 S748 — F2 S747

FADER/SUB:W S703 — F5 S711 — F4 S710

P/M/SCAN S705 — S.F.E/D.R.C S704 — F7 S713 — F6 S712

DEFEAT S717 — F10 S716 — F9 S715 — F8 S714

(KI 3) (KI 2) (KI 1) (KI 0)

(KO 0) (KO 1) (KO 2) (KO 3) (KO 4) (KO 5)

R743 10K R742 10K R741 10K R740 10K

LCD DRIVER

To Main P.C.Board (CB3)

CH503 (R) (R GND) (L GND) (L)

Audio P.C.Board

ZD501 HZS6.8NB2

E547 220/10

E531 220/10

Q501,502 2SC4081

SOUND FIELD EXPANDER PROCESSOR

IC502 μPC4570G2

S.F.E. MIX CONTROL

IC506, 507 MC14066BFEL

IC506

C523 10/16(B.P)

E501 10/16

E503 10/16

R501 10K

R503 10K

R505 10K

C501 22P

E505 1/50

R507 10K

R513 1K

R566 160

E543 0.1/50

R509 100K

E507 10/16

R543 5.1K

Q501

R511 68K

R565 1.5K

R517 2.2K

R519 2.2K

R515 3.6K

R521 10K

C505 100P

R549 680

R550 2.2K

S.F.E. LEVEL CONTROL

IC507

E502 10/16

R504 10K

R508 10K

E506 1/50

R502 10K

C502 22P

R512 68K

R514 1.5K

R518 2.2K

R520 2.2K

Q502

R544 5.1K

R510 100K

R564 1K

E508 10/16

E542 0.1/50

C506 100P

R516 3.6K

R522 10K

R555 5.1K

R554 5.1K

R553 5.1K

IC501 M5238FP

INPUT ISOLATOR

R506 10K

BUFFER

(1/2 Vcc)

(Vcc)

E528 100/10

FILTER SWITCHING

IC509 HD14066BFP

E536 10/16

R573 R574 R576 33K x3

R572 10K

R525 1.3K

R527 47K

IC503

R529 3.3K

R577 4.7K

R579 4.7K

C539 10/16(B.P)

R531 47K

R532 47K

E509 10/16

E511 2.2/50

E515 1/50

DIODE

VARIABLE GAIN CELL

R526 1.3K

R530 3.3K

R528 47K

IC505

E522 220/10

E513 10/16

E514 10/16

E533 22/10

R571 R570 R569 33K x3

E535 10/16

R575 10K

Q503 DTC114EU

FILTER SWITCHING DRIVER

R563 100K

R567 330K

R585 200K

IC503,505 μPC4570G2

R568 8.2K

R578 4.7K

E516 1/50

E510 10/16

E512 2.2/50

R580 4.7K

R581 11K

R582 11K

IC504 μPC1571C

DYNAMIC RANG CONTROL

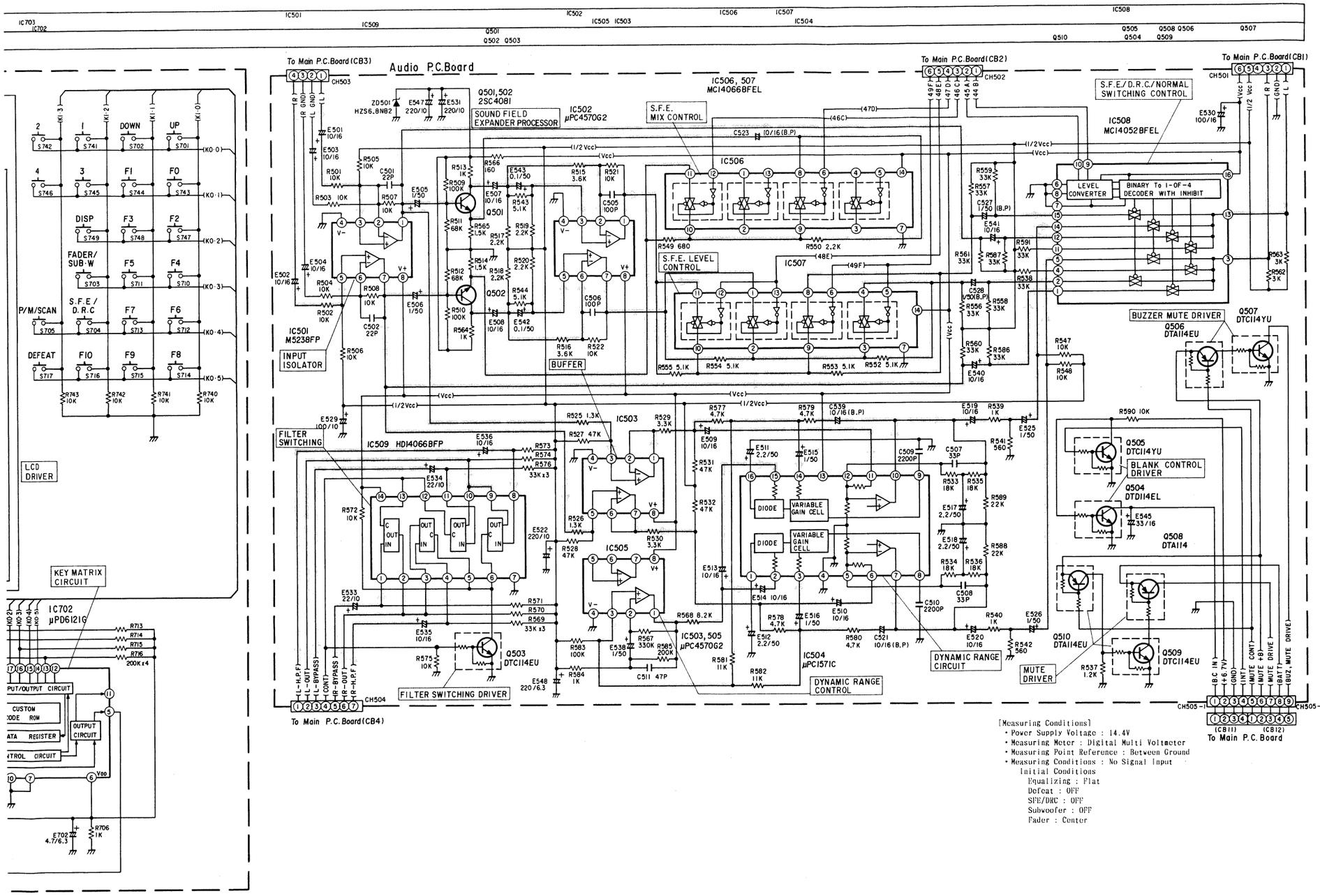
E548 220/6.3

R584 1K

C511 47P

CH504 (1 L-H.P.F) (2 L-OUT) (3 L-BYPASS) (4 CONT) (5 R-BYPASS) (6 R-OUT) (7 R-H.P.F)

To Main P.C.Board (CB4)



[Measuring Conditions]
- Power Supply Voltage : 14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : No Signal Input
  - Initial Conditions
    - Equalizing : Flat
    - Defeat : OFF
    - SFE/DRC : OFF
    - Subwoofer : OFF
    - Fader : Center

	E	C	B
Q501	1.89V	5.58V	2.61V
Q502	1.89V	5.58V	2.61V
Q503	0V	0V	9.88V
Q504	0V	9.54V	0V
Q505	0V	0V	5.34V
Q506	3.29V	0V	3.28V
Q507	0V	0V	0V
Q508	13.78V	0V	13.64V
Q509	0V	13.05V	3.20V
Q510	3.29V	0V	3.28V
Q701	0V	6.62V	0V
Q702	4.93V	1.47V	4.3V
Q703	4.93V	4.28V	1.13V
Q704	4.94V	6.73V	5.54V
Q706	4.93V	0V	9.54V

Q705

1	4.73V
2	0V
3	4.94V
4	0V
5	0V

IC501

1	5.49V
2	5.49V
3	5.49V
4	0V
5	5.49V
6	5.49V
7	5.49V
8	10.41V

IC502

1	5.5V
2	5.5V
3	5.5V
4	0V
5	5.5V
6	5.5V
7	5.5V
8	10.41V

IC503

1	5.5V
2	5.5V
3	5.5V
4	0V
5	5.5V
6	5.5V
7	5.5V
8	8.93V

IC504

1	1.06V
2	1.86V
3	1.87V
4	0V
5	1.86V
6	1.86V
7	4.11V
8	1.86V
9	1.86V
10	4.08V
11	1.87V
12	1.87V
13	10.41V
14	1.88V
15	1.86V
16	1.06V

IC505

1	5.48V
2	5.5V
3	5.5V
4	0V
5	5.5V
6	5.5V
7	5.48V
8	10.41V

IC506

1	
2	
3	
4	
5	
6	0V
7	0V
8	1.9V
9	1.9V
10	1.9V
11	1.9V
12	0V
13	
14	10.41V

IC507

1	5.51V
2	5.51V
3	5.51V
4	5.51V
5	0V
6	1.26V
7	0V
8	5.5V
9	5.5V
10	5.5V
11	5.51V
12	0V
13	0V
14	10.41V

IC508

1	5.51V
2	5.48V
3	5.51V
4	5.48V
5	5.5V
6	0V
7	0V
8	0V
9	0V
10	0V
11	5.48V
12	5.51V
13	5.51V
14	5.5V
15	5.48V
16	10.41V

IC509

1	5.87V
2	5.87V
3	5.87V
4	5.49V
5	0V
6	0V
7	0V
8	5.49V
9	5.87V
10	5.87V
11	5.87V
12	9.88V
13	9.88V
14	10.41V

IC701

1	0V
2	4.72V
3	4.94V
4	0V
5	4.94V
6	0V
7	
8	0V
9	0V
10	
11	4.27V
12	0V
13	4.93V
14	1.7V
15	0V
16	4.93V

IC702

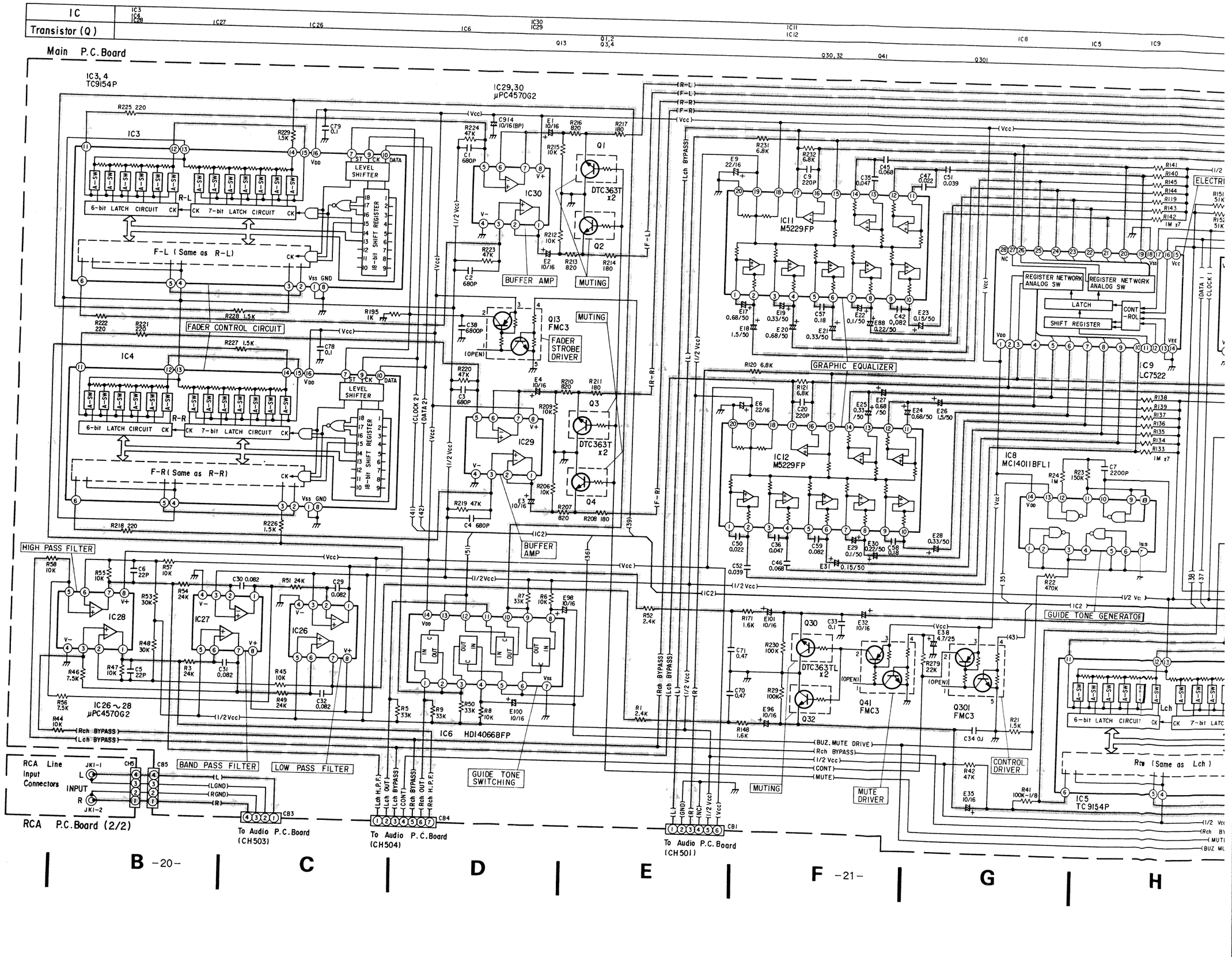
1	0V	11	
2	0V	12	
3	0V	13	2.55V
4	0V	14	2.55V
5	0V	15	2.55V
6	2.55V	16	2.55V
7	0V	17	2.55V
8	2.54V	18	2.55V
9	2.49V	19	2.55V
10	0V	20	2.55V

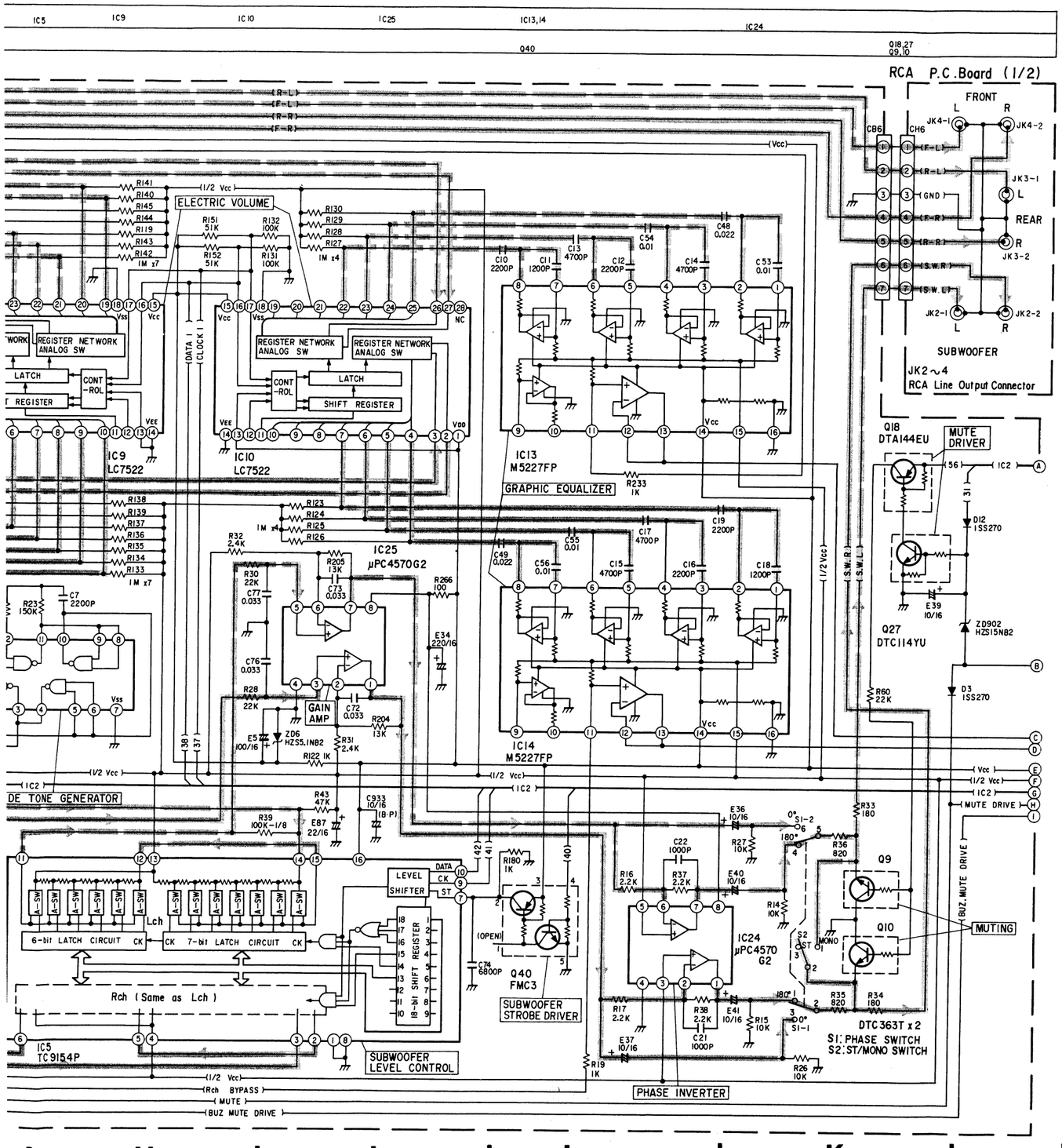
IC703

1	1.92V	21	1.92V	41	4.93V	61	1.92V	81	1.92V
2	1.92V	22	1.92V	42	0V	62	1.92V	82	1.92V
3	1.92V	23	1.92V	43	0V	63	1.92V	83	1.92V
4	1.92V	24	1.92V	44	0V	64	1.92V	84	1.92V
5	1.92V	25	1.92V	45	2.78V	65	1.92V	85	1.92V
6	1.92V	26	1.92V	46		66	1.92V	86	1.92V
7	1.92V	27	1.92V	47	2.52V	67	1.92V	87	1.92V
8	1.92V	28	1.92V	48	2.21V	68	1.92V	88	1.92V
9	1.92V	29	1.92V	49	2.22V	69	1.92V	89	1.92V
10	1.92V	30	1.92V	50	0V	70	1.92V	90	1.92V
11	1.92V	31	1.14V	51	1.92V	71	1.92V	91	1.92V
12	1.92V	32	4.36V	52	1.92V	72	1.92V	92	1.92V
13	1.92V	33	1.38V	53	1.92V	73	1.92V	93	1.92V
14	1.92V	34		54	1.92V	74	1.92V	94	1.92V
15	1.92V	35		55	1.92V	75	1.92V	95	1.92V
16	1.92V	36	1.99V	56	1.92V	76	1.92V	96	1.92V
17	1.92V	37	2.2V	57	1.92V	77	1.92V	97	1.92V
18	1.92V	38	1.58V	58	1.92V	78	1.92V	98	1.92V
19	1.92V	39	0V	59	1.92V	79	1.92V	99	1.92V
20	1.92V	40	4.93V	60	1.92V	80	1.92V	100	1.92V

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,00}$

Schematic Diagram (1/3)





	E	C	B
Q1	0V	0V	0V
Q2	0V	0V	0V
Q3	0V	0V	0V
Q4	0V	0V	0V
Q9	0V	0V	1.23V
Q10	0V	0V	1.23V
Q18	5.36V	5.33V	0V
Q27	0V	0V	2.23V
Q30	0V	0V	10.35V
Q32	0V	0V	10.35V

Q13

1	0V
2	10.37V
3	10.41V
4	4.51V
5	0V

Q41

1	0V
2	10.35V
3	10.37V
4	3.61V
5	0V

Q40

1	0V
2	10.31V
3	10.37V
4	4.4V
5	0V

Q301

1	0V
2	9.88V
3	10.38V
4	2.22V
5	0V

IC3

1	0V
2	5.64V
3	5.64V
4	5.51V
5	5.64V
6	5.64V
7	0V
8	0V
9	0V
10	0V
11	5.64V
12	5.64V
13	5.51V
14	5.64V
15	5.64V
16	10.36V

IC6

1	5.82V
2	5.82V
3	5.82V
4	5.43V
5	0V
6	0V
7	0V
8	5.44V
9	5.82V
10	5.82V
11	5.82V
12	10.16V
13	10.16V
14	10.4V

IC4

1	0V
2	5.64V
3	5.64V
4	5.51V
5	5.64V
6	5.64V
7	0V
8	0V
9	0V
10	0V
11	5.64V
12	5.64V
13	5.52V
14	5.64V
15	5.64V
16	10.35V

IC8

1	0V
2	0V
3	10.43V
4	10.43V
5	0V
6	0V
7	0V
8	10.44V
9	10.44V
10	0V
11	10.44V
12	2.61V
13	0V
14	10.44V

IC5

1	0V
2	5.52V
3	5.51V
4	5.52V
5	5.52V
6	5.52V
7	0V
8	0V
9	0V
10	0V
11	5.52V
12	5.52V
13	5.52V
14	5.52V
15	5.52V
16	10.35V

IC13

1	5.48V
2	5.51V
3	5.48V
4	5.51V
5	5.48V
6	5.51V
7	5.51V
8	5.51V
9	
10	
11	5.51V
12	10.46V
13	5.51V
14	0V

IC9

1	10.36V	15	5.18V
2	5.53V	16	0V
3	5.52V	17	0V
4	5.02V	18	0V
5	5.02V	19	5.02V
6	5.02V	20	5.02V
7	5.02V	21	5.02V
8	5.02V	22	5.02V
9	5.02V	23	5.02V
10	5.02V	24	5.02V
11		25	5.02V
12		26	5.52V
13	0V	27	5.52V
14	0V	28	

IC10

1	10.36V	15	5.18V
2	5.53V	16	0V
3	5.52V	17	0V
4	5.02V	18	0V
5	5.02V	19	
6	5.02V	20	
7	5.02V	21	
8		22	5.02V
9		23	5.02V
10		24	5.02V
11		25	5.02V
12		26	5.52V
13	10.37V	27	5.52V
14	0V	28	

IC11

1	5.27V	11	5.28V
2	5.51V	12	5.51V
3	5.27V	13	5.28V
4	5.51V	14	5.51V
5	5.28V	15	5.47V
6	5.51V	16	5.51V
7	5.29V	17	5.51V
8	5.51V	18	10.4V
9	5.29V	19	5.51V
10	5.51V	20	0V

IC12

1	5.27V	11	5.28V
2	5.51V	12	5.51V
3	5.27V	13	5.28V
4	5.51V	14	5.51V
5	5.28V	15	5.47V
6	5.51V	16	5.51V
7	5.29V	17	5.51V
8	5.51V	18	10.4V
9	5.29V	19	5.51V
10	5.51V	20	0V

IC14

1	5.48V
2	5.51V
3	5.48V
4	5.51V
5	5.48V
6	5.51V
7	5.51V
8	5.51V
9	
10	
11	5.51V
12	10.46V
13	5.51V
14	

IC24

1	5.51V
2	5.51V
3	5.51V
4	0V
5	5.51V
6	5.51V
7	5.51V
8	10.41V

IC25

1	5.51V
2	5.51V
3	5.51V
4	0V
5	5.51V
6	5.51V
7	5.51V
8	10.41V

IC26

1	5.51V
2	5.51V
3	5.51V
4	0V
5	5.51V
6	5.51V
7	5.51V
8	10.41V

IC27

1	5.51V
2	5.51V
3	5.51V
4	0V
5	5.51V
6	5.51V
7	5.51V
8	10.41V

IC28

1	5.51V
2	5.51V
3	5.51V
4	0V
5	5.51V
6	5.51V
7	5.51V
8	10.41V

IC29

1	5.51V
2	5.51V
3	5.51V
4	0V
5	5.51V
6	5.51V
7	5.51V
8	10.41V

IC30

1	5.51V
2	5.51V
3	5.51V
4	0V
5	5.51V
6	5.51V
7	5.51V
8	10.41V

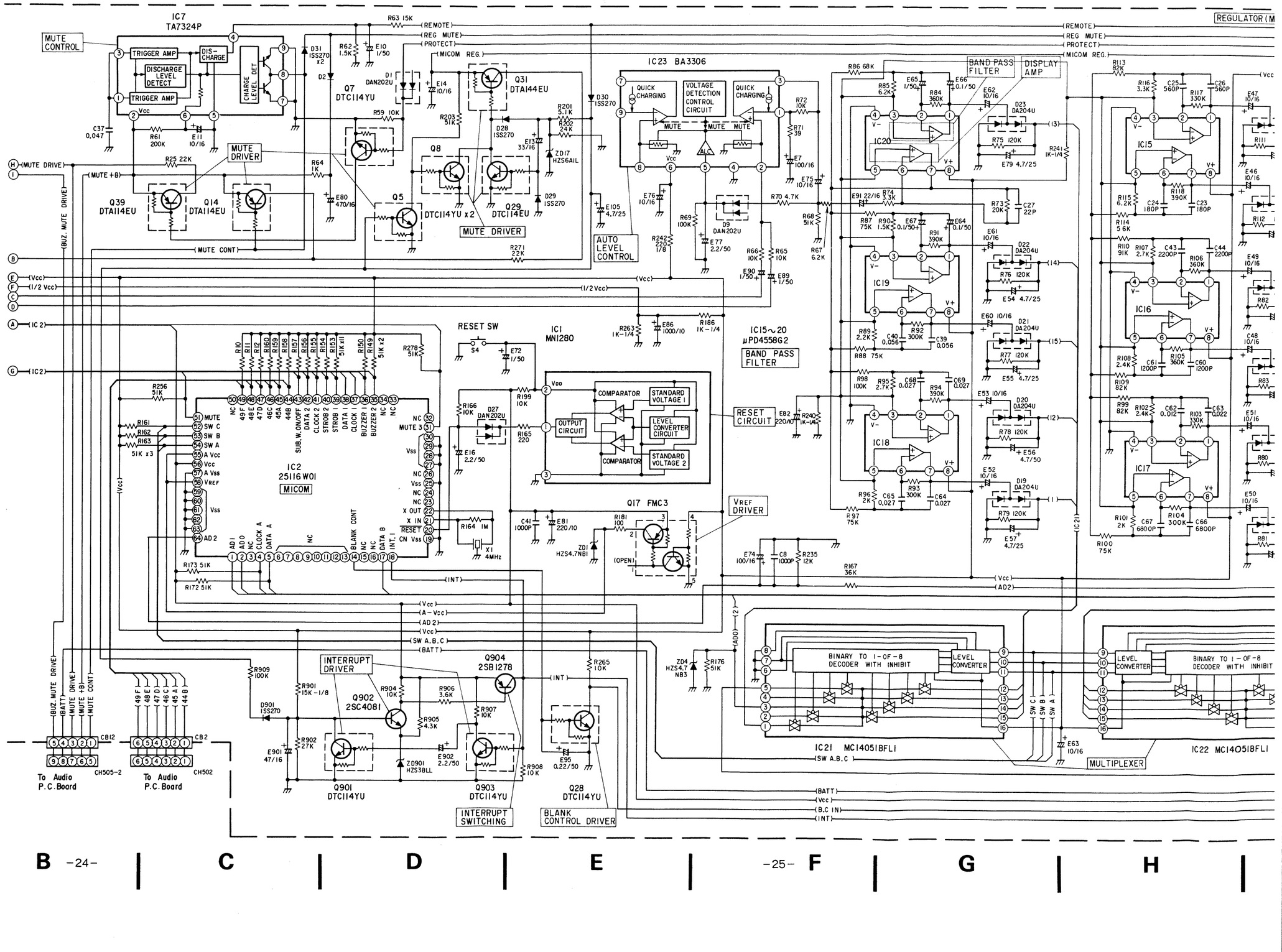
[Measuring Conditions]
- Power Supply Voltage : 14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : No Signal Input

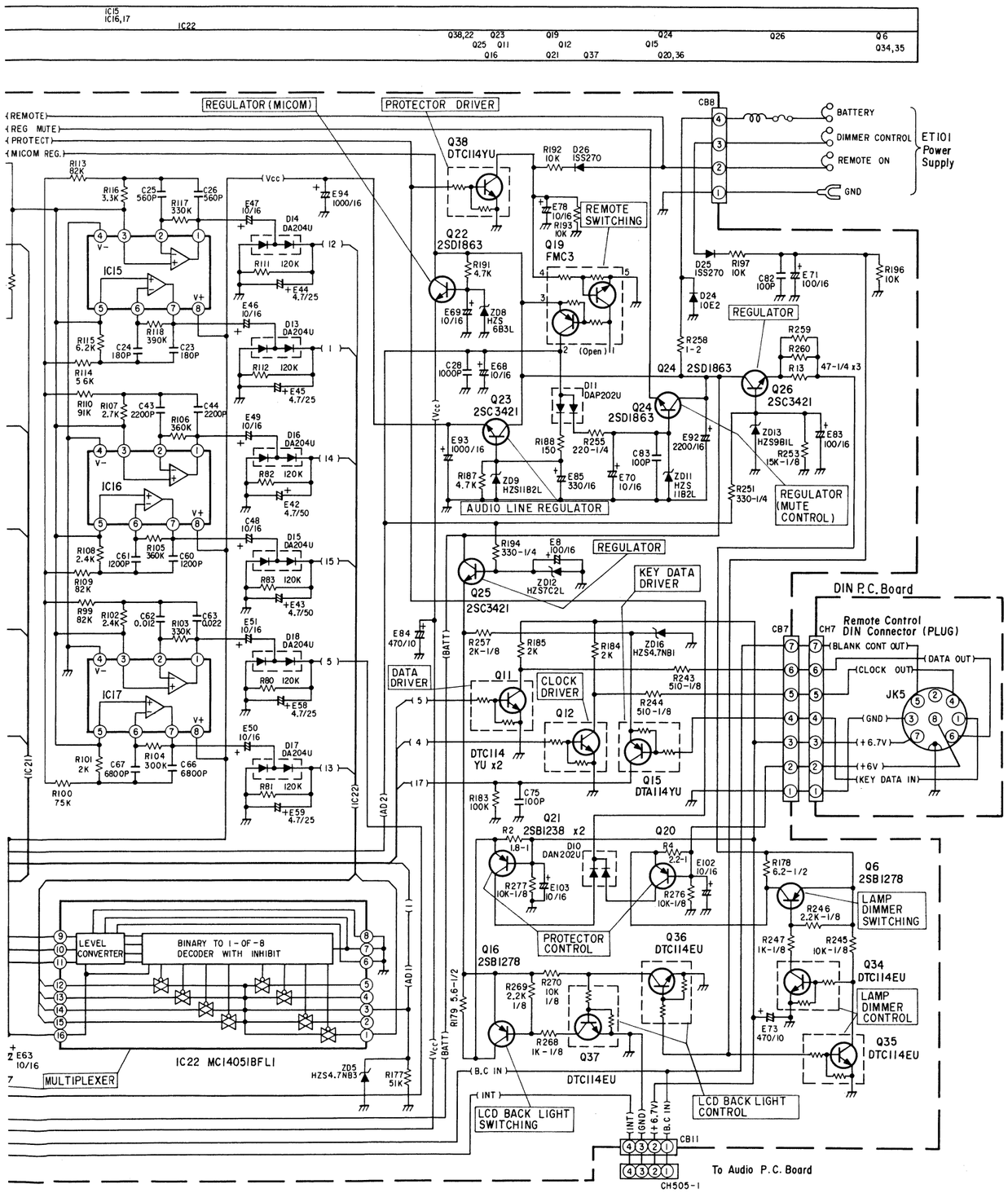
Initial Conditions
- Equalizing : Flat
- Defeat : OFF
- SPE/DRC : OFF
- Subwoofer : OFF
- Fader : Center

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$

Schematic Diagram (2/3)

IC	IC7	IC2	IC1	IC23	IC21	IC20 IC19,18	IC15 IC16,17	IC22
Transistor (Q)	Q39 Q14	Q7 Q5 Q8 Q31 Q29 Q901 Q902	Q903,904 Q28	Q17				





	E	C	B
Q5	0V	0V	13.9V
Q6	6.06V	5.95V	5.32V
Q7	0V	3.28V	0V
Q8	0V	13.68V	0V
Q11	0V	2.38V	1.4V
Q12	0V	0.9V	4.45V
Q14	3.29V	0V	3.29V
Q15	4.3V	0V	6.61V
Q16	7.21V	7.13V	6.49V
Q20	5.95V	0V	5.66V
Q21	7.13V	0V	7.13V
Q22	5.37V	13.77V	5.95V
Q23	7.22V	13.77V	7.85V
Q24	10.49V	13.77V	11.03V
Q25	10.41V	13.77V	11.05V
Q26	8.29V	13.77V	8.91V
Q28	0V	9.52V	0V
Q29	0V	13.68V	0V
Q31	13.77V	0V	13.68V
Q34	0V	0V	3.33V
Q35	0V	3.33V	0V
Q36	0V	3.9V	0V
Q37	0V	0V	3.9V
Q38	0V	4.85V	0V
Q39	3.29V	0V	3.28V
Q901	0V	3.9V	0V
Q902	3.25V	3.26V	3.9V
Q903	0V	0V	5.34V
Q904	5.36V	5.34V	4.76V

Q17

1	0V
2	5.29V
3	5.37V
4	10.43V
5	0V

Q19

1	0V
2	13.37V
3	13.77V
4	4.86V
5	0V

IC1

1	5.25V
2	5.25V
3	0V

IC2

1	0V	17	0.54V	33		49	0V
2	0V	18	5.34V	34		50	
3		19	0V	35	0V	51	10.16V
4	2.99V	20	5.34V	36	0V	52	1.58V
5	1.4V	21	4.86V	37	0V	53	1.48V
6		22	1.33V	38	0V	54	1.48V
7		23		39	0V	55	4.65V
8		24		40	0V	56	5.37V
9		25	0V	41	0V	57	0V
10		26		42	3.64V	58	4.65V
11		27	0V	43	2.21V	59	0V
12		28	0V	44	0V	60	0V
13		29	0V	45	0V	61	0V
14	0V	30	0V	46	2.8V	62	0V
15		31	2.77V	47	0V	63	0V
16		32		48	0V	64	3.48V

IC7

1	1.37V
2	3.29V
3	1.37V
4	1.19V
5	0V
6	2.67V
7	0V
8	3.29V
9	0V

IC15

1	5.18V
2	5.2V
3	5.19V
4	0V
5	5.19V
6	5.19V
7	5.18V
8	10.4V

IC16

1	5.18V
2	5.2V
3	5.19V
4	0V
5	5.19V
6	5.19V
7	5.18V
8	10.4V

IC17

1	5.18V
2	5.2V
3	5.19V
4	0V
5	5.19V
6	5.19V
7	5.18V
8	10.4V

IC18

1	5.18V
2	5.2V
3	5.19V
4	0V
5	5.19V
6	5.19V
7	5.18V
8	10.4V

IC19

1	5.18V
2	5.2V
3	5.19V
4	0V
5	5.19V
6	5.19V
7	5.18V
8	10.4V

IC20

1	5.18V
2	5.2V
3	5.19V
4	0V
5	5.19V
6	5.19V
7	5.18V
8	10.4V

IC21

1	0V
2	
3	0V
4	
5	0.39V
6	0V
7	0V
8	0V
9	0V
10	0V
11	0V
12	0V
13	0V
14	0V
15	0V
16	10.41V

IC22

1	0V
2	
3	0V
4	
5	
6	0V
7	0V
8	0V
9	0V
10	0V
11	0V
12	0V
13	0V
14	0V
15	0V
16	10.41V

IC23

1	1.83V
2	0V
3	1.83V
4	0V
5	0V
6	9.79V
7	
8	
9	

[Measuring Conditions]
- Power Supply Voltage : 14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : No Signal Input
  - Initial Conditions
    - Equalizing : Flat
    - Defeat : OFF
    - SFE/DRC : OFF
    - Subwoofer : OFF
    - Fader : Center

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$

Schematic Diagram (3/3)

IC	IC701	IC703 IC702	IC501 IC509	IC502 IC505 IC503	IC506 IC507 IC504
Tramsi Stor (Q)	Q706 Q702 Q705 Q703,Q704,Q701		Q501 Q502 Q503		

Remote P.C.Board

Remote Control DIN Connector ET701

CH703 (CLOCK IN) (KEY DATA OUT) (DATA IN) (GND) (LAMP +B) (LCD BACK LIGHT) (GND) (BLANK CONT IN)

CH701 (BC IN) (DATA IN) (GND) (KEY OUT) (+6.7V) (+6V) (CLOCK)

CH702

Connector P.C. Board

BLANK CONTROL DRIVER — Q706 DTAII4YU — D703 DAN202U — REGULATOR (5V) — R748 10K — R710 10K

DATA DRIVER — Q702 DTAII4YU — R730 510 — R725 2K — C706 100P — C705 100P — Q704 2SD1664 — R723 1K — E704 10/16 — ZD701 RD5.6MB2 — Q703 DTAII4YU — R722 10K — R726 510 — R702 2K — Q701 DTCII4YU — R721 10K

CLOCK DRIVER

KEY DATA DRIVER

MULTI VIBRATOR — PL701 PL702 PL704 PL705 — 6V-70mA X2 — 6.7V-85mA X2 — Q705 FMC3 — E705 10/16 — R704 2K — R703 100K — C701 1000P

LCD701 — SEG1 ~ SEG40 — SEG41 ~ SEG80 — (COM-A) (COM-B)

LCD DRIVER — 80-OUTPUT SEGMENT DRIVER — 80-CH DATA SELECTOR — (A) 80-bit LATCH — (B) 80-bit LATCH — (A) 80-STAGE SHIFT REGISTER — (B) 80-STAGE SHIFT-REGISTER

IC703 MSM5265FP — OSC — 1/4 or 1/8 — 1/2 — COMMON DRIVER — SYNC CIRCUIT — R729 1M — C704 5600P — R728 100K — R709 22K — COM-A — COM-B

KEY MATRIX CIRCUIT

2 S742 — 1 S741 — DOWN S702 — UP S701 — (KO·0)

4 S746 — 3 S745 — F1 S744 — F0 S743 — (KO·1)

DISP S749 — F3 S748 — F2 S747 — (KO·2)

FADER/SUB-W S703 — F5 S711 — F4 S710 — (KO·3)

P/M/SCAN S705 — S.F.E./D.R.C S704 — F7 S713 — F6 S712 — (KO·4)

DEFEAT S717 — F10 S716 — F9 S715 — F8 S714 — (KO·5)

R743 10K — R742 10K — R741 10K — R740 10K

IC702 μPD6121G — KEY INPUT — KEY INPUT/OUTPUT CIRCUIT — TIMING GENERATOR — CUSTOM CODE ROM — DATA REGISTER — DIVIDER — CONTROL CIRCUIT — OUTPUT CIRCUIT — OSC — X701 455KHz — C702 220P — C703 220P — R713 R714 R715 R716 200K x4

IC701 μPD4538BG — D702 DAN202U — R727 1K — E702 4.7/6.3 — R706 1K

To Main P.C.Board (CB3)

Audio P.C.Board

CH503 (R) (R GND) (L GND) (L)

ZD501 HZS6.8NB2 — E547 220/10 — E531 220/10

Q501,502 2SC4081

SOUND FIELD EXPANDER PROCESSOR — IC502 μPC457G2

S.F.E. MIX CONTROL — IC506, 507 MC14066BFEL

IC506

S.F.E. LEVEL CONTROL — IC507

IC501 M5238FP — INPUT ISOLATOR

BUFFER

FILTER SWITCHING — IC509 HD14066BFP

IC503

IC505

VARIABLE GAIN CELL — DIODE

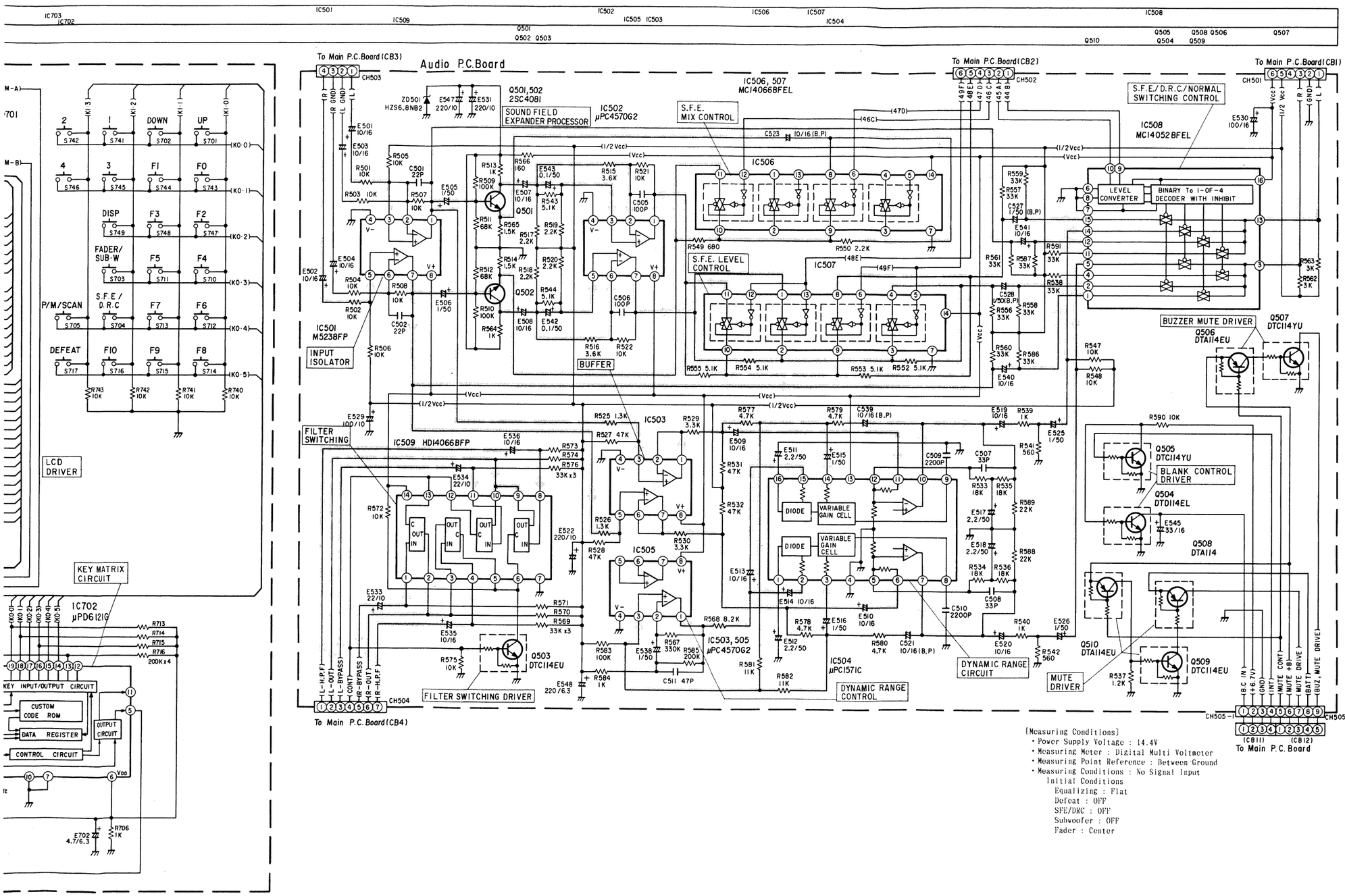
IC503, 505 μPC4570G2

IC504 μPC1571C — DYNAMIC RANGE CONTROL

Q503 DTCII4EU — FILTER SWITCHING DRIVER

CH504 (L-H.P.F) (L-OUT) (L-BYPASS) (CONT) (R-BYPASS) (R-OUT) (R-H.P.F)

To Main P.C.Board (CB4)



	E	C	B
Q501	1.89V	5.58V	2.61V
Q502	1.89V	5.58V	2.61V
Q503	0V	0V	9.88V
Q504	0V	9.54V	0V
Q505	0V	0V	5.34V
Q506	3.29V	0V	3.28V
Q507	0V	0V	0V
Q508	13.78V	0V	13.64V
Q509	0V	13.65V	3.26V
Q510	3.29V	0V	3.28V
Q701	0V	6.62V	0V
Q702	4.93V	1.47V	4.3V
Q703	4.93V	4.28V	1.13V
Q704	4.94V	6.73V	5.54V
Q706	4.93V	0V	9.54V

Q705

1	4.73V
2	0V
3	4.94V
4	0V
5	0V

IC501

1	5.49V
2	5.49V
3	5.49V
4	0V
5	5.49V
6	5.49V
7	5.49V
8	10.41V

IC502

1	5.5V
2	5.5V
3	5.5V
4	0V
5	5.5V
6	5.5V
7	5.5V
8	10.41V

IC503

1	5.5V
2	5.5V
3	5.5V
4	0V
5	5.5V
6	5.5V
7	5.5V
8	8.93V

IC504

1	1.08V
2	1.88V
3	1.87V
4	0V
5	1.86V
6	1.86V
7	4.11V
8	1.86V
9	1.86V
10	4.08V
11	1.87V
12	1.87V
13	10.41V
14	1.88V
15	1.86V
16	1.06V

IC505

1	5.48V
2	5.5V
3	5.5V
4	0V
5	5.5V
6	5.5V
7	5.48V
8	10.41V

IC506

1	
2	
3	
4	
5	
6	0V
7	0V
8	1.9V
9	1.9V
10	1.9V
11	1.9V
12	0V
13	
14	10.41V

IC507

1	5.51V
2	5.51V
3	5.51V
4	5.51V
5	0V
6	1.26V
7	0V
8	5.5V
9	5.5V
10	5.5V
11	5.51V
12	0V
13	0V
14	10.41V

IC508

1	5.51V
2	5.48V
3	5.51V
4	5.48V
5	5.5V
6	0V
7	0V
8	0V
9	0V
10	0V
11	5.48V
12	5.51V
13	5.51V
14	5.5V
15	5.48V
16	10.41V

IC509

1	5.87V
2	5.87V
3	5.87V
4	5.49V
5	0V
6	0V
7	0V
8	5.49V
9	5.87V
10	5.87V
11	5.87V
12	9.88V
13	9.88V
14	10.41V

IC701

1	0V
2	4.72V
3	4.94V
4	0V
5	4.94V
6	0V
7	
8	0V
9	0V
10	
11	4.27V
12	0V
13	4.93V
14	1.7V
15	0V
16	4.93V

IC702

1	0V	11	
2	0V	12	
3	0V	13	2.55V
4	0V	14	2.55V
5	0V	15	2.55V
6	2.55V	16	2.55V
7	0V	17	2.55V
8	2.54V	18	2.55V
9	2.49V	19	2.55V
10	0V	20	2.55V

IC703

1	1.92V	21	1.92V	41	4.93V	61	1.92V	81	1.92V
2	1.92V	22	1.92V	42	0V	62	1.92V	82	1.92V
3	1.92V	23	1.92V	43	0V	63	1.92V	83	1.92V
4	1.92V	24	1.92V	44	0V	64	1.92V	84	1.92V
5	1.92V	25	1.92V	45	2.78V	65	1.92V	85	1.92V
6	1.92V	26	1.92V	46		66	1.92V	86	1.92V
7	1.92V	27	1.92V	47	2.52V	67	1.92V	87	1.92V
8	1.92V	28	1.92V	48	2.21V	68	1.92V	88	1.92V
9	1.92V	29	1.92V	49	2.22V	69	1.92V	89	1.92V
10	1.92V	30	1.92V	50	0V	70	1.92V	90	1.92V
11	1.92V	31	1.14V	51	1.92V	71	1.92V	91	1.92V
12	1.92V	32	4.36V	52	1.92V	72	1.92V	92	1.92V
13	1.92V	33	1.38V	53	1.92V	73	1.92V	93	1.92V
14	1.92V	34		54	1.92V	74	1.92V	94	1.92V
15	1.92V	35		55	1.92V	75	1.92V	95	1.92V
16	1.92V	36	1.99V	56	1.92V	76	1.92V	96	1.92V
17	1.92V	37	2.2V	57	1.92V	77	1.92V	97	1.92V
18	1.92V	38	1.56V	58	1.92V	78	1.92V	98	1.92V
19	1.92V	39	0V	59	1.92V	79	1.92V	99	1.92V
20	1.92V	40	4.93V	60	1.92V	80	1.92V	100	1.92V

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$

Electrical Parts List

Resistor : Carbon resistors under 1/4 watts are not mentioned in the parts list, please confirm them by schematic diagram.

Capacitor : μF = microfarads, pF = picofarads

Abbreviations

RES. =	Resistor	CAP. =	Capacitor
C.F. =	Carbon Film	ELY. =	Electrolytic
M.F. =	Metal Film	CER. =	Ceramic
M.O. =	Metal Oxide Film	MYL. =	Mylar
M.P. =	Metal Plate	TAN. =	Tantalum
TR. =	Transistor	POLY. =	Polystyrol
TRANS. =	Transformer	PP. =	Polypropylene
CP. =	Chip	PLT. =	Polyethylene
CMT. =	Cement	PF. =	Polyester Film

Symbol No.	Part No.	Description
Main P. C. Board		
IC's		
IC1	51T72309F07	MN1280
IC2	51T25116W01	25116W01
IC3	51T62903F01	TC9154P
IC4	51T62903F01	TC9154P
IC5	51T62903F01	TC9154P
IC6	51T92029F03	HD14066BFP
IC7	51S42616F01	TA7324P
IC8	51T40242T02	MC14011BFL1
IC9	51T92660F01	LC7522
IC10	51T92660F01	LC7522
IC11	51T74296F02	M5229FP
IC12	51T74296F02	M5229FP
IC13	51T84232F02	M5227FP
IC14	51T84232F02	M5227FP
IC15	51T94125F01	μPC4558G2
IC16	51T94125F01	μPC4558G2
IC17	51T94125F01	μPC4558G2
IC18	51T94125F01	μPC4558G2
IC19	51T94125F01	μPC4558G2
IC20	51T94125F01	μPC4558G2
IC21	51T25844W03	MC14051BFL1
IC22	51T25844W03	MC14051BFL1
IC23	51T15166W01	BA3306
IC24	51T83403F04	μPC4570G2
IC25	51T83403F04	μPC4570G2
IC26	51T83403F04	μPC4570G2
IC27	51T83403F04	μPC4570G2
IC28	51T83403F04	μPC4570G2
IC29	51T83403F04	μPC4570G2
IC30	51T83403F04	μPC4570G2

Symbol No.	Part No.	Description
Transistors		
Q1	48T62967F34	CP., DTC363T
Q2	48T62967F34	CP., DTC363T
Q3	48T62967F34	CP., DTC363T
Q4	48T62967F34	CP., DTC363T
Q5	48T94606F02	CP.DTC114YU
Q6	48T83416F01	2SB1278
Q7	48T94606F02	CP., DTC114YU
Q8	48T94606F02	CP., DTC114YU
Q9	48T62967F34	CP., DTC363T
Q10	48T62967F34	CP., DTC363T
Q11	48T94606F02	CP., DTC114YU
Q12	48T94606F02	CP., DTC114YU
Q13	48T73888F13	CP., FMC3
Q14	48T94606F56	CP., DTA114EU
Q15	48T94606F52	CP., DTA114YU
Q16	48T83416F01	2SB1278
Q17	48T73888F13	CP., FMC3
Q18	48T94606F51	CP., DTA144EU
Q19	48T73888F13	CP., FMC3
Q20	48T84234F03	2SB1238
Q21	48T84234F03	2SB1238
Q22	48T83617F03	2SD1863
Q23	48T69176F01	2SC3421
Q24	48T83617F03	2SD1863
Q25	48T69176F01	2SC3421
Q26	48T69176F01	2SC3421
Q27	48T94606F02	CP., DTC114YU
Q28	48T94606F02	CP., DTC114YU
Q29	48T94606F06	CP., DTC114EU
Q30	48T82763F31	DTC363TL
Q31	48T94606F51	CP., DTA144EU
Q32	48T82763F31	DTC363TL
Q34	48T94606F06	CP., DTC114EU
Q35	48T94606F06	CP., DTC114EU
Q36	48T94606F06	CP., DTC114EU
Q37	48T94606F06	CP., DTC114EU
Q38	48T94606F02	CP., DTC114YU
Q39	48T94606F56	CP., DTA114EU
Q40	48T73888F13	CP., FMC3
Q41	48T73888F13	CP., FMC3
Q301	48T73888F13	CP., FMC3
Q901	48T94606F02	CP., DTC114YU
Q902	48T94582F01	CP., 2SC4081
Q903	48T94606F02	CP., DTC114YU
Q904	48T83416F01	2SB1278

Symbol No.	Part No.	Description
Diodes		
D1	48T94608F03	CP., DAN202U
D2	48T84758F01	1SS270
D3	48T84758F01	1SS270
D9	48T94608F03	CP., DAN202U
D10	48T94608F03	CP., DAN202U
D11	48T94608F02	CP., DAP202U
D12	48T84758F01	1SS270
D13	48T94608F01	CP., DA204U
D14	48T94608F01	CP., DA204U
D15	48T94608F01	CP., DA204U
D16	48T94608F01	CP., DA204U
D17	48T94608F01	CP., DA204U
D18	48T94608F01	CP., DA204U
D19	48T94608F01	CP., DA204U
D20	48T94608F01	CP., DA204U
D21	48T94608F01	CP., DA204U
D22	48T94608F01	CP., DA204U
D23	48T94608F01	CP., DA204U
D24	48C40235G02	10E2
D25	48T84758F01	1SS270
D26	48T84758F01	1SS270
D27	48T94608F03	CP., DAN202U
D28	48T84758F01	1SS270
D29	48T84758F01	1SS270
D30	48T84758F01	1SS270
D31	48T84758F01	1SS270
D901	48T84758F01	1SS270
ZD1	48T90517F20	Zener, HZS4.7NB1
ZD4	48T90517F22	Zener, HZS4.7NB3
ZD5	48T90517F22	Zener, HZS4.7NB3
ZD6	48T90517F24	Zener, HZS5.1NB2
ZD8	48T83128F06	Zener, HZS6B3L
ZD9	48T83128F32	Zener, HZS11B2L
ZD11	48T83128F32	Zener, HZS11B2L
ZD12	48T83128F17	Zener, HZS7C2L
ZD13	48T83128F22	Zener, HZS9B1L
ZD16	48T90517F20	Zener, HZS4.7NB1
ZD17	48T83128F01	Zener, HZS6A1L
ZD901	48T91071F05	Zener, HZS3BLL
ZD902	48T90517F57	Zener, HZS15NB2
Switches		
S1	40T25473W02	Slide, SSSF1 (PHASE)
S2	40T25473W02	Slide, SSSF1 (ST/MONO)
S4	40T16096W02	Tact, SKHHLS (RESET)

Symbol No.	Part No.	Description
Crystal		
X1	91T16231W01	C4CA 4MHz
Capacitors		
C1	08S65128F55	CP., 680pF
E1	23S61523F12	ELY., 10μF/16V
C2	08S65128F55	CP., 680pF
E2	23S61523F12	ELY., 10μF/16V
C3	08S65128F55	CP., 680pF
E3	23S61523F12	ELY., 10μF/16V
C4	08S65128F55	CP., 680pF
E4	23S61523F12	ELY., 10μF/16V
C5	08S65128F19	CP., 22pF
E5	23T73862F06	ELY., 100μF/16V
C6	08S65128F19	CP., 22pF
E6	23S61523F13	ELY., 22μF/16V
C7	08S65128F61	CP., 2200pF
E7	23T73862F06	ELY., 100μF/16V
C8	08S65128F57	CP., 1000pF
E8	23T94181F41	ELY., 100μF/16V
C9	08S65128F43	CP., 220pF
E9	23S57007F11	ELY., 22μF/16V
C10	08S65128F61	CP., 2200pF
E10	23S61523F29	ELY., 1μF/50V
C11	08S65128F58	CP., 1200pF
E11	23S61524F13	ELY., 10μF/16V
C12	08S65128F61	CP., 2200pF
C13	08S65128F65	CP., 4700pF
E13	23S61523F14	ELY., 33μF/16V
C14	08S65128F65	CP., 4700pF
E14	23T15412W13	ELY., 10μF/16V
C15	08S65128F65	CP., 4700pF
C16	08S65128F61	CP., 2200pF
E16	23S61524F33	ELY., 2.2μF/50V
C17	08S65128F65	CP., 4700pF
E17	23S61523F35	ELY., 0.68μF/50V
C18	08S65128F58	CP., 1200pF
E18	23T90516F08	ELY., 1.5μF/50V
C19	08S65128F61	CP., 2200pF
E19	23S61523F27	ELY., 0.33μF/50V
C20	08S65128F43	CP., 220pF
E20	23S61523F35	ELY., 0.68μF/50V
C21	08S65128F57	CP., 1000pF
E21	23S61523F27	ELY., 0.33μF/50V
C22	08S65128F57	CP., 1000pF
E22	23S61523F25	ELY., 0.1μF/50V
C23	08S65128F41	CP., 180pF
E23	23T90516F07	ELY., 0.15μF/50V
C24	08S65128F41	CP., 180pF

Symbol No.	Part No.	Description
E24	23S61523F35	ELY., 0.68μF/50V
C25	08S65128F53	CP., 560pF
E25	23S61523F27	ELY., 0.33μF/50V
C26	08S65128F53	CP., 560pF
E26	23T90516F08	ELY., 1.5μF/50V
C27	08S65128F19	CP., 22pF
E27	23S61523F35	ELY., 0.68μF/50V
C28	08S65128F57	CP., 1000pF
E28	23S61523F27	ELY., 0.33μF/50V
C29	08T90316F28	TF, 0.082μF
E29	23S61523F25	ELY., 0.1μF/50V
C30	08T50579F12	TF, 0.082μF
E30	23S61523F26	ELY., 0.22μF/50V
C31	08T90316F28	TF, 0.082μF
E31	23T90516F07	ELY., 0.15μF/50V
C32	08T90316F28	TF, 0.082μF
E32	23S61524F13	ELY., 10μF/16V
C33	08T90316F29	TF, 0.1μF
C34	08T90316F29	TF, 0.1μF
E34	23T73861F07	ELY., 220μF/16V
C35	08T90316F25	TF, 0.047μF
E35	23S61524F13	ELY., 10μF/16V
C36	08T90316F25	TF, 0.047μF
E36	23S61524F13	ELY., 10μF/16V
C37	08T90316F25	TF, 0.047μF
E37	23S61524F13	ELY., 10μF/16V
C38	08T90316F15	TF, 6800pF
E38	23S61523F17	ELY., 4.7μF/25V
C39	08S60102F29	CP., 0.056μF
E39	23S61523F12	ELY., 10μF/16V
C40	08S60102F29	CP., 0.056μF
E40	23S61524F13	ELY., 10μF/16V
C41	08T90316F05	TF, 1000pF
E41	23S61524F13	ELY., 10μF/16V
C42	08T90316F28	TF, 0.082μF
E42	23S61523F17	ELY., 4.7μF/25V
C43	08S65128F61	CP., 2200pF
E43	23S61523F17	ELY., 4.7μF/25V
C44	08S65128F61	CP., 2200pF
E44	23S61523F17	ELY., 4.7μF/25V
C45	08T90316F27	TF, 0.068μF
E45	23S61524F18	ELY., 4.7μF/25V
C46	08T90316F27	TF, 0.068μF
E46	23S61524F13	ELY., 10μF/16V
C47	08T90316F21	TF, 0.022μF
E47	23S61523F12	ELY., 10μF/16V
C48	08T90316F21	TF, 0.022μF
E48	23S61523F12	ELY., 10μF/16V
C49	08T90316F21	TF, 0.022μF
E49	23S61523F12	ELY., 10μF/16V
C50	08T90316F21	TF, 0.022μF
E50	23S61523F12	ELY., 10μF/16V

Symbol No.	Part No.	Description
C51	08T90316F24	TF, 0.039μF
E51	23S61523F12	ELY., 10μF/16V
C52	08T90316F24	TF, 0.039μF
E52	23S61523F12	ELY., 10μF/16V
C53	08T90316F17	TF, 0.01μF
E53	23S61524F13	ELY., 10μF/16V
C54	08T90316F17	TF, 0.01μF
E54	23S61523F17	ELY., 4.7μF/25V
C55	08T90316F17	TF, 0.01μF
E55	23S57422F08	ELY., 4.7μF/25V
C56	08T90316F17	TF, 0.01μF
E56	23S61524F18	ELY., 4.7μF/25V
C57	08T90316F32	TF, 0.18μF
E57	23S57422F08	ELY., 4.7μF/25V
C58	08T90316F32	TF, 0.18μF
E58	23S57422F08	ELY., 4.7μF/25V
C59	08T90316F28	TF, 0.082μF
E59	23S61523F17	ELY., 4.7μF/25V
C60	08S65128F58	CP., 1200pF
E60	23S61523F12	ELY., 10μF/16V
C61	08S65128F58	CP., 1200pF
E61	23S61523F12	ELY., 10μF/16V
C62	08S65128F70	CP., 0.012μF
E62	23S61523F12	ELY., 10μF/16V
C63	08S65128F70	CP., 0.012μF
E63	23S61524F13	ELY., 10μF/16V
C64	08S60102F25	CP., 0.027μF
E64	23S61523F25	ELY., 0.1μF/50V
C65	08S60102F25	CP., 0.027μF
E65	23S57422F01	ELY., 0.1μF/50V
C66	08S65128F67	CP., 6800pF
E66	23S61523F25	ELY., 0.1μF/50V
C67	08S65128F67	CP., 6800pF
E67	23S61523F25	ELY., 0.1μF/50V
C68	08S60102F25	CP., 0.027μF
E68	23S61524F13	ELY., 10μF/16V
C69	08S60102F25	CP., 0.027μF
E69	23S61524F13	ELY., 10μF/16V
C70	08T90316F37	TF, 0.47μF
E70	23T15412W13	ELY., 10μF/16V
C71	08T90316F37	TF, 0.47μF
E71	23T73862F09	ELY., 100μF/16V
C72	08T90316F23	TF, 0.033μF
E72	23T15412W05	ELY., 1μF/50V
C73	08T90316F23	TF, 0.033μF
E73	23T95169F07	ELY., 470μF/10V
C74	08T90316F15	TF, 6800pF
E74	23T73862F06	ELY., 100μF/16V
C75	08S65128F35	CP., 100pF
E75	23S61524F13	ELY., 10μF/16V
C76	08T90316F23	TF, 0.033μF
E76	23S61524F13	ELY., 10μF/16V

Symbol No.	Part No.	Description
C77	08T90316F23	TF, 0.033μF
E77	23S61524F33	ELY., 2.2μF / 50V
C78	08T90316F29	TF, 0.1μF
E78	23S61524F13	ELY., 10μF / 16V
C79	08T90316F29	TF, 0.1μF
E79	23S57422F08	ELY., 4.7μF / 25V
E80	23T65374F14	ELY., 470μF / 16V
E81	23S92017F01	ELY., 220μF / 10V
C82	08S65128F35	CP., 100pF
E82	23S92017F01	ELY., 220μF / 10V
C83	08S65128F35	CP., 100pF
E83	23T94181F41	ELY., 100μF / 16V
E84	23T95169F07	ELY., 470μF / 10V
E85	23T16360W37	ELY., 330μF / 16V
E86	23T16360W39	ELY., 1000μF / 16V
E87	23S61523F13	ELY., 22μF / 16V
E88	23S61523F26	ELY., 0.22μF / 50V
E89	23S61523F29	ELY., 1μF / 50V
E90	23S61523F29	ELY., 1μF / 50V
E91	23S61523F13	ELY., 22μF / 16V
E92	23T25702W01	ELY., 2200μF / 16V
E93	23T16360W39	ELY., 1000μF / 16V
E94	23T16360W39	ELY., 1000μF / 16V
E95	23S61523F26	ELY., 0.22μF / 50V
E96	23S61524F13	ELY., 10μF / 16V
E98	23S61524F13	ELY., 10μF / 16V
E100	23S61524F13	ELY., 10μF / 16V
E101	23S61524F13	ELY., 10μF / 16V
E102	23S61523F12	ELY., 10μF / 16V
E103	23S61523F12	ELY., 10μF / 16V
E105	23S57422F08	ELY., 4.7μF / 25V
E901	23S61523F15	ELY., 47μF / 16V
E902	23S61524F33	ELY., 2.2μF / 50V
C914	23T41366F16	ELY., (B.P) 10μF / 16V
C933	23T41366F16	ELY., (B.P) 10μF / 16V

Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)

R1	06S64995F62	2.4K ohm
R2	06T92260F23	M.F. 1.8 ohm 1W
R3	06S64995F86	24K ohm
R4	06T92260F25	M.F. 2.2 ohm 1W
R5	06S64995F89	33K ohm
R6	06S64995F77	10K ohm
R7	06S64995F89	33K ohm
R8	06S64995F77	10K ohm
R9	06S64995F89	33K ohm
R10	06S64995F94	51K ohm
R11	06S64995F94	51K ohm
R12	06S64995F94	51K ohm
R13	06T70072F21	47 ohm 1/4W
R14	06S64995F77	10K ohm
R15	06S64995F77	10K ohm
R16	06S64995F61	2.2K ohm
R17	06S64995F61	2.2K ohm
R19	06S64995F53	1K ohm
R21	06S64995F57	1.5K ohm
R22	06S64996F18	470K ohm
R23	06S64996F06	150K ohm
R24	06S64996F26	1M ohm
R25	06S64995F85	22K ohm
R26	06S64995F77	10K ohm
R27	06S64995F77	10K ohm
R28	06S64995F85	22K ohm
R29	06S64996F02	100K ohm
R30	06S64995F85	22K ohm
R31	06S64995F62	2.4K ohm
R32	06S64995F62	2.4K ohm
R33	06S64995F35	180 ohm
R34	06S64995F35	180 ohm
R35	06S64995F51	820 ohm
R36	06S64995F51	820 ohm
R37	06S64995F61	2.2K ohm
R38	06S64995F61	2.2K ohm
R39	06S64996F02	100K ohm
R41	06S53331F02	100K ohm 1/8W
R42	06S64995F93	47K ohm
R43	06S64995F93	47K ohm
R44	06S64995F77	10K ohm
R45	06S64995F77	10K ohm
R46	06S64995F74	7.5K ohm
R47	06S64995F77	10K ohm
R48	06S64995F88	30K ohm
R49	06S64995F86	24K ohm
R50	06S64995F89	33K ohm
R51	06S64995F86	24K ohm
R52	06S64995F62	2.4K ohm
R53	06S64995F88	30K ohm
R54	06S64995F86	24K ohm
R55	06S64995F77	10K ohm
R56	06S64995F74	7.5K ohm
R57	06S64995F77	10K ohm
R58	06S64995F77	10K ohm
R59	06S64995F77	10K ohm
R60	06S64995F85	22K ohm
R61	06S64996F09	200K ohm
R62	06S64995F57	1.5K ohm
R63	06S64995F81	15K ohm
R64	06S64995F53	1K ohm
R65	06S64995F77	10K ohm

Symbol No.	Part No.	Description
R66	06S64995F77	10K ohm
R67	06S64995F72	6.2K ohm
R68	06S64995F94	51K ohm
R69	06S64996F02	100K ohm
R70	06S64995F69	4.7K ohm
R71	06S64995F19	39 ohm
R72	06S64995F77	10K ohm
R73	06S64995F84	20K ohm
R74	06S64995F65	3.3K ohm
R75	06S64996F04	120K ohm
R76	06S64996F04	120K ohm
R77	06S64996F04	120K ohm
R78	06S64996F04	120K ohm
R79	06S64996F04	120K ohm
R80	06S64996F04	120K ohm
R81	06S64996F04	120K ohm
R82	06S64996F04	120K ohm
R83	06S64996F04	120K ohm
R84	06S64996F15	360K ohm
R85	06S64995F72	6.2K ohm
R86	06S64995F97	68K ohm
R87	06S64995F98	75K ohm
R88	06S64995F98	75K ohm
R89	06S64995F61	2.2K ohm
R90	06S64995F57	1.5K ohm
R91	06S64996F16	390K ohm
R92	06S64996F13	300K ohm
R93	06S64996F13	300K ohm
R94	06S64996F16	390K ohm
R95	06S64995F63	2.7K ohm
R96	06S64995F60	2K ohm
R97	06S64995F98	75K ohm
R98	06S64996F02	100K ohm
R99	06S64995F99	82K ohm
R100	06S64995F98	75K ohm
R101	06S64995F60	2K ohm
R102	06S64995F62	2.4K ohm
R103	06S64996F14	330K ohm
R104	06S64996F13	300K ohm
R105	06S64996F15	360K ohm
R106	06S64996F15	360K ohm
R107	06S64995F63	2.7K ohm
R108	06S64995F62	2.4K ohm
R109	06S64995F99	82K ohm
R110	06S64996F01	91K ohm
R111	06S64996F04	120K ohm
R112	06S64996F04	120K ohm
R113	06S64995F99	82K ohm
R114	06S64995F95	56K ohm
R115	06S64995F72	6.2K ohm
R116	06S64995F65	3.3K ohm
R117	06S64996F14	330K ohm

Symbol No.	Part No.	Description
R118	06S64996F16	390K ohm
R119	06S64996F26	1M ohm
R120	06S64995F73	6.8K ohm
R121	06S64995F73	6.8K ohm
R122	06S64995F53	1K ohm
R123	06S64996F26	1M ohm
R124	06S64996F26	1M ohm
R125	06S64996F26	1M ohm
R126	06S64996F26	1M ohm
R127	06S64996F26	1M ohm
R128	06S64996F26	1M ohm
R129	06S64996F26	1M ohm
R130	06S64996F26	1M ohm
R131	06S64996F02	100K ohm
R132	06S64996F02	100K ohm
R133	06S64996F26	1M ohm
R134	06S64996F26	1M ohm
R135	06S64996F26	1M ohm
R136	06S64996F26	1M ohm
R137	06S64996F26	1M ohm
R138	06S64996F26	1M ohm
R139	06S64996F26	1M ohm
R140	06S64996F26	1M ohm
R141	06S64996F26	1M ohm
R142	06S64996F26	1M ohm
R143	06S64996F26	1M ohm
R144	06S64996F26	1M ohm
R145	06S64996F26	1M ohm
R148	06S64995F58	1.6K ohm
R149	06S64995F94	51K ohm
R150	06S64995F94	51K ohm
R151	06S64995F94	51K ohm
R152	06S64995F94	51K ohm
R153	06S64995F94	51K ohm
R154	06S64995F94	51K ohm
R155	06S64995F94	51K ohm
R156	06S64995F94	51K ohm
R157	06S64995F94	51K ohm
R158	06S64995F94	51K ohm
R159	06S64995F94	51K ohm
R160	06S64995F94	51K ohm
R161	06S64995F94	51K ohm
R162	06S64995F94	51K ohm
R163	06S64995F94	51K ohm
R164	06S64996F26	1M ohm
R165	06S64995F37	220 ohm
R166	06S64995F77	10K ohm
R167	06S64995F90	36K ohm
R171	06S64995F58	1.6K ohm
R172	06S64995F94	51K ohm
R173	06S64995F94	51K ohm

Symbol No.	Part No.	Description
R176	06S64995F94	51K ohm
R177	06S64995F94	51K ohm
R178	06T93535F12	M.F. 6.2 ohm 1/2W
R179	06T93535F11	M.F. 5.6 ohm 1/2W
R180	06S64995F53	1K ohm
R181	06S64995F29	100 ohm
R183	06S64996F02	100K ohm
R184	06S64995F60	2K ohm
R185	06S64995F60	2K ohm
R186	06T70072F53	1K ohm 1/4W
R187	06S64995F69	4.7K ohm
R188	06S64995F33	150 ohm
R191	06S64995F69	4.7K ohm
R192	06S64995F77	10K ohm
R193	06S64995F77	10K ohm
R194	06T70072F41	330 ohm 1/4W
R195	06S64995F53	1K ohm
R196	06S64995F77	10K ohm
R197	06S64995F77	10K ohm
R199	06S64995F77	10K ohm
R201	06S64995F70	5.1K ohm
R202	06S64995F86	24K ohm
R203	06S64995F94	51K ohm
R204	06S64995F80	13K ohm
R205	06S64995F80	13K ohm
R206	06S64995F77	10K ohm
R207	06S64995F51	820 ohm
R208	06S64995F35	180 ohm
R209	06S64995F77	10K ohm
R210	06S64995F51	820 ohm
R211	06S64995F35	180 ohm
R212	06S64995F77	10K ohm
R213	06S64995F51	820 ohm
R214	06S64995F35	180 ohm
R215	06S64995F77	10K ohm
R216	06S64995F51	820 ohm
R217	06S64995F35	180 ohm
R218	06S64995F37	220 ohm
R219	06S64995F93	47K ohm
R220	06S64995F93	47K ohm
R221	06S64995F37	220 ohm
R222	06S64995F37	220 ohm
R223	06S64995F93	47K ohm
R224	06S64995F93	47K ohm
R225	06S64995F37	220 ohm
R226	06S64995F57	1.5K ohm
R227	06S64995F57	1.5K ohm
R228	06S64995F57	1.5K ohm
R229	06S64995F57	1.5K ohm
R230	06S64996F02	100K ohm
R231	06S64995F73	6.8K ohm
R232	06S64995F73	6.8K ohm

Symbol No.	Part No.	Description
R233	06S64995F53	1K ohm
R235	06S64995F79	12K ohm
R240	06T70072F53	1K ohm 1/4W
R241	06T70072F53	1K ohm 1/4W
R242	06S53330F37	220 ohm 1/8W
R243	06S53330F46	510 ohm 1/8W
R244	06S53330F46	510 ohm 1/8W
R245	06S53330F77	10K ohm 1/8W
R246	06S53330F61	2.2K ohm 1/8W
R247	06S53330F53	1K ohm 1/8W
R251	06T70072F41	330 ohm 1/4W
R253	06S53330F81	15K ohm 1/8W
R255	06T70072F37	220 ohm 1/4W
R256	06S64995F94	51K ohm
R257	06S53330F60	2K ohm 1/8W
R258	06T71921F21	CMT., 1 ohm 2W
R259	06T70072F21	47 ohm 1/4W
R260	06T70072F21	47 ohm 1/4W
R263	06T70072F53	1K ohm 1/4W
R265	06S64995F77	10K ohm
R266	06S64995F29	100 ohm
R268	06S53330F53	1K ohm 1/8W
R269	06S53330F61	2.2K ohm 1/8W
R270	06S53330F77	10K ohm 1/8W
R271	06S64995F85	22K ohm
R276	06S53330F77	10K ohm 1/8W
R277	06S53330F77	10K ohm 1/8W
R278	06S64995F94	51K ohm
R279	06S64995F85	22K ohm
R901	06S53330F81	15K ohm 1/8W
R902	06S64995F87	27K ohm
R904	06S64995F77	10K ohm
R905	06S64995F68	4.3K ohm
R906	06S64995F66	3.6K ohm
R907	06S64995F77	10K ohm
R908	06S64995F77	10K ohm
R909	06S64996F02	100K ohm

Audio P. C. Board

IC's

IC501	51T80136F04	M5238FP
or	51T80136F03	M5238FP
IC502	51T83403F04	μPC4570G2
IC503	51T83403F04	μPC4570G2
IC504	51T80831F01	μPC1571C

Symbol No.	Part No.	Description
IC505	51T83403F04	μPC4570G2
IC506	51T40941U02	MC14066BFEL
IC507	51T40941U02	MC14066BFEL
IC508	51T15630W02	MC14052BFEL
IC509	51T92029F03	HD14066BFP
Transistors		
Q501	48T94582F01	CP., 2SC4081
Q502	48T94582F01	CP., 2SC4081
Q503	48T94606F06	CP., DTC114EU
Q504	48T82763F22	DTD114EL
Q505	48T94606F02	CP., DTC114YU
Q506	48T94606F56	CP., DTA114EU
Q507	48T94606F02	CP., DTC114YU
Q508	48T62966F02	CP., DTA114
Q509	48T94606F06	CP., DTC114EU
Q510	48T94606F56	CP., DTA114EU
Diode		
ZD501	48T90517F33	Zener, HZS6.8NB2
Capacitors		
C501	08S65128F19	CP., 22pF
E501	23T90537F17	ELY., 10μF/16V
C502	08S65128F19	CP., 22pF
E502	23T90537F17	ELY., 10μF/16V
E503	23T90537F17	ELY., 10μF/16V
E504	23T90537F17	ELY., 10μF/16V
C505	08S65128F35	CP., 100pF
C506	08S65128F35	CP., 100pF
C507	08S65128F23	CP., 33pF
C508	08S65128F23	CP., 33pF
C509	08S65128F61	CP., 2200pF
C510	08S65128F61	CP., 2200pF
C511	08S65128F27	CP., 47pF
E505	23S61523F29	ELY., 1μF/50V
E506	23S61523F29	ELY., 1μF/50V
E507	23S61523F12	ELY., 10μF/16V
E508	23S61523F12	ELY., 10μF/16V
E509	23S61523F12	ELY., 10μF/16V
E510	23S61523F12	ELY., 10μF/16V
E511	23S61523F30	ELY., 2.2μF/50V

Symbol No.	Part No.	Description
E512	23S61523F30	ELY., 2.2μF/50V
E513	23S61523F12	ELY., 10μF/16V
E514	23S61523F12	ELY., 10μF/16V
E515	23S61523F29	ELY., 1μF/50V
E516	23S61523F29	ELY., 1μF/50V
E517	23S61523F30	ELY., 2.2μF/50V
E518	23S61523F30	ELY., 2.2μF/50V
E519	23S61523F12	ELY., 10μF/16V
E520	23S61523F12	ELY., 10μF/16V
C521	23T82372F08	ELY., (B.P) 10μF/16V
E522	23S92017F01	ELY., 220μF/10V
C523	23T82372F08	ELY., (B.P) 10μF/16V
E525	23S61523F29	ELY., 1μF/50V
E526	23S61523F29	ELY., 1μF/50V
C527	23T82372F18	ELY., (B.P) 1μF/50V
C528	23T82372F18	ELY., (B.P) 1μF/50V
E529	23S61523F34	ELY., 100μF/10V
E530	23T73862F06	ELY., 100μF/16V
E531	23S92017F01	ELY., 220μF/10V
E533	23S61523F09	ELY., 22μF/10V
E534	23S61523F09	ELY., 22μF/10V
E535	23S61523F12	ELY., 10μF/16V
E536	23S61523F12	ELY., 10μF/16V
E538	23S61523F29	ELY., 1μF/50V
C539	23T82372F08	ELY., (B.P) 10μF/16V
E540	23S61523F12	ELY., 10μF/16V
E541	23S61523F12	ELY., 10μF/16V
E542	23S61523F25	ELY., 0.1μF/50V
E543	23S61523F25	ELY., 0.1μF/50V
E545	23S61523F14	ELY., 33μF/16V
E547	23S92017F01	ELY., 220μF/10V
E548	23S61524F38	ELY., 220μF/6.3V
Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R501	06S64995F77	10K ohm
R502	06S64995F77	10K ohm
R503	06S64995F77	10K ohm
R504	06S64995F77	10K ohm
R505	06S64995F77	10K ohm
R506	06S64995F77	10K ohm
R507	06S64995F77	10K ohm
R508	06S64995F77	10K ohm
R509	06S64996F02	100K ohm
R510	06S64996F02	100K ohm
R511	06S64995F97	68K ohm
R512	06S64995F97	68K ohm
R513	06S64995F53	1K ohm
R514	06S64995F57	1.5K ohm
R515	06S64995F66	3.6K ohm

Symbol No.	Part No.	Description
R516	06S64995F66	3.6K ohm
R517	06S64995F61	2.2K ohm
R518	06S64995F61	2.2K ohm
R519	06S64995F61	2.2K ohm
R520	06S64995F61	2.2K ohm
R521	06S64995F77	10K ohm
R522	06S64995F77	10K ohm
R525	06S64995F56	1.3K ohm
R526	06S64995F56	1.3K ohm
R527	06S64995F93	47K ohm
R528	06S64995F93	47K ohm
R529	06S64995F65	3.3K ohm
R530	06S64995F65	3.3K ohm
R531	06S64995F93	47K ohm
R532	06S64995F93	47K ohm
R533	06S64995F83	18K ohm
R534	06S64995F83	18K ohm
R535	06S64995F83	18K ohm
R536	06S64995F83	18K ohm
R537	06S64995F55	1.2K ohm
R538	06S64995F89	33K ohm
R539	06S64995F53	1K ohm
R540	06S64995F53	1K ohm
R541	06S64995F47	560 ohm
R542	06S64995F47	560 ohm
R543	06S64995F70	5.1K ohm
R544	06S64995F70	5.1K ohm
R547	06S64995F77	10K ohm
R548	06S64995F77	10K ohm
R549	06S64995F49	680 ohm
R550	06S64995F61	2.2K ohm
R552	06S64995F70	5.1K ohm
R553	06S64995F70	5.1K ohm
R554	06S64995F70	5.1K ohm
R555	06S64995F70	5.1K ohm
R556	06S64995F89	33K ohm
R557	06S64995F89	33K ohm
R558	06S64995F89	33K ohm
R559	06S64995F89	33K ohm
R560	06S64995F89	33K ohm
R561	06S64995F89	33K ohm
R562	06S64995F64	3K ohm
R563	06S64995F64	3K ohm
R564	06S64995F53	1K ohm
R565	06S64995F57	1.5K ohm
R566	06T70072F34	160 ohm 1/4W
R567	06S64996F14	330K ohm
R568	06S64995F75	8.2K ohm
R569	06S64995F89	33K ohm
R570	06S64995F89	33K ohm
R571	06S64995F89	33K ohm
R572	06S64995F77	10K ohm

Symbol No.	Part No.	Description
R573	06S64995F89	33K ohm
R574	06S64995F89	33K ohm
R575	06S64995F77	10K ohm
R576	06S64995F89	33K ohm
R577	06S64995F69	4.7K ohm
R578	06S64995F69	4.7K ohm
R579	06S64995F69	4.7K ohm
R580	06S64995F69	4.7K ohm
R581	06S64995F78	11K ohm
R582	06S64995F78	11K ohm
R583	06S64996F02	100K ohm
R584	06S64995F53	1K ohm
R585	06S64996F09	200K ohm
R586	06S64995F89	33K ohm
R587	06S64995F89	33K ohm
R588	06S64995F85	22K ohm
R589	06S64995F85	22K ohm
R590	06S64995F77	10K ohm
R591	06S64995F89	33K ohm

Remote P. C. Board

IC's

IC701	51T90267F02	μPD4538BG
IC702	51T25674W01	μPD6121G
IC703	51T25669W01	MSM5265FP

Transistors

Q701	48T94606F02	CP., DTC114YU
Q702	48T94606F52	CP., DTA114YU
Q703	48T94606F52	CP., DTA114YU
Q704	48T80614F01	CP., 2SD1664
Q705	48T73888F13	CP., FMC3
Q706	48T94606F52	CP., DTA114YU

Diodes

D702	48T94608F03	CP., DAN202U
D703	48T94608F03	CP., DAN202U
ZD701	48T62934F22	Zener, CP.RD5.6MB2

Symbol No.	Part No.	Description
Switches		
S701	40T10876W12	Tact, SKHLAJ (UP)
S702	40T10876W12	Tact, SKHLAJ (DOWN)
S703	40T10876W12	Tact, SKHLAJ (FADER/SUB W.)
S704	40T10876W12	Tact, SKHLAJ (S.F.E/D.R.C)
S705	40T10876W12	Tact, SKHLAJ (P/M/SCAN)
S710	40T25677W01	Tact, SKHRAB (F4)
S711	40T25677W01	Tact, SKHRAB (F5)
S712	40T25677W01	Tact, SKHRAB (F6)
S713	40T25677W01	Tact, SKHRAB (F7)
S714	40T25677W01	Tact, SKHRAB (F8)
S715	40T25677W01	Tact, SKHRAB (F9)
S716	40T25677W01	Tact, SKHRAB (F10)
S717	40T25677W01	Tact, SKHRAB (DEFEAT)
S741	40T25677W02	Tact, SKHRAH (1)
S742	40T25677W02	Tact, SKHRAH (2)
S743	40T25677W01	Tact, SKHRAB (F0)
S744	40T25677W01	Tact, SKHRAB (F1)
S745	40T25677W02	Tact, SKHRAH (3)
S746	40T25677W02	Tact, SKHRAH (4)
S747	40T25677W01	Tact, SKHRAB (F2)
S748	40T25677W01	Tact, SKHRAB (F3)
S749	40T25677W01	Tact, SKHRAB (DISP)
Crystal		
X701	91T25670W01	CER., Lock, 455KHz
Lamps		
PL701	65T95274F02	6V-70mA
PL702	65T95274F02	6V-70mA
PL704	65T95083F01	6.7V-85mA
PL705	65T95083F01	6.7V-85mA
Capacitors		
C701	08S65128F57	CP., 1000pF
C702	08S65128F43	CP., 220pF
E702	23T74181F27	CP., TAN. 4.7F/6.3V
C703	08S65128F43	CP., 220pF
C704	08S65128F66	CP., 5600pF
E704	23S57422F09	ELY., 10μF/16V
C705	08S65128F35	CP., 100pF
E705	23S57422F09	ELY., 10μF/16V

Symbol No.	Part No.	Description
C706	08S65128F35	CP., 100pF
C707	08S65128F35	CP., 100pF
C708	08T15399W01	CP., 0.022μF
Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R701	06S64995F60	2K ohm
R702	06S64995F60	2K ohm
R703	06S64996F02	100K ohm
R704	06S64995F60	2K ohm
R705	06S64996F01	91K ohm
R706	06S64995F53	1K ohm
R707	06S64995F60	2K ohm
R708	06S64995F60	2K ohm
R709	06S64995F85	22K ohm
R710	06S64995F77	10K ohm
R713	06S64996F09	200K ohm
R714	06S64996F09	200K ohm
R715	06S64996F09	200K ohm
R716	06S64996F09	200K ohm
R721	06S64995F77	10K ohm
R722	06S64995F77	10K ohm
R723	06S64995F53	1K ohm
R725	06S64995F60	2K ohm
R726	06S64995F46	510 ohm
R727	06S64995F53	1K ohm
R728	06S64996F02	100K ohm
R729	06S64996F26	1M ohm
R730	06S64995F46	510 ohm
R731	06S64995F46	510 ohm
R732	06S64995F46	510 ohm
R740	06S64995F77	10K ohm
R741	06S64995F77	10K ohm
R742	06S64995F77	10K ohm
R743	06S64995F77	10K ohm
R748	06S64995F77	10K ohm
Miscellaneous		
ET101	01T15209W05	Assy., Power Supply
ET701	01T25946W01	Remote Control, DIN Connector
JK1	09T70753F10	RCA Line Input Connectors
JK2	09T70753F10	RCA Line Output Connectors
JK3	09T70753F10	RCA Line Output Connectors
JK4	09T70753F10	RCA Line Output Connectors
JK5	09T82054F01	Remote Control, DIN Connector (Plug)
LCD701	65T25671W01	LCD, Display

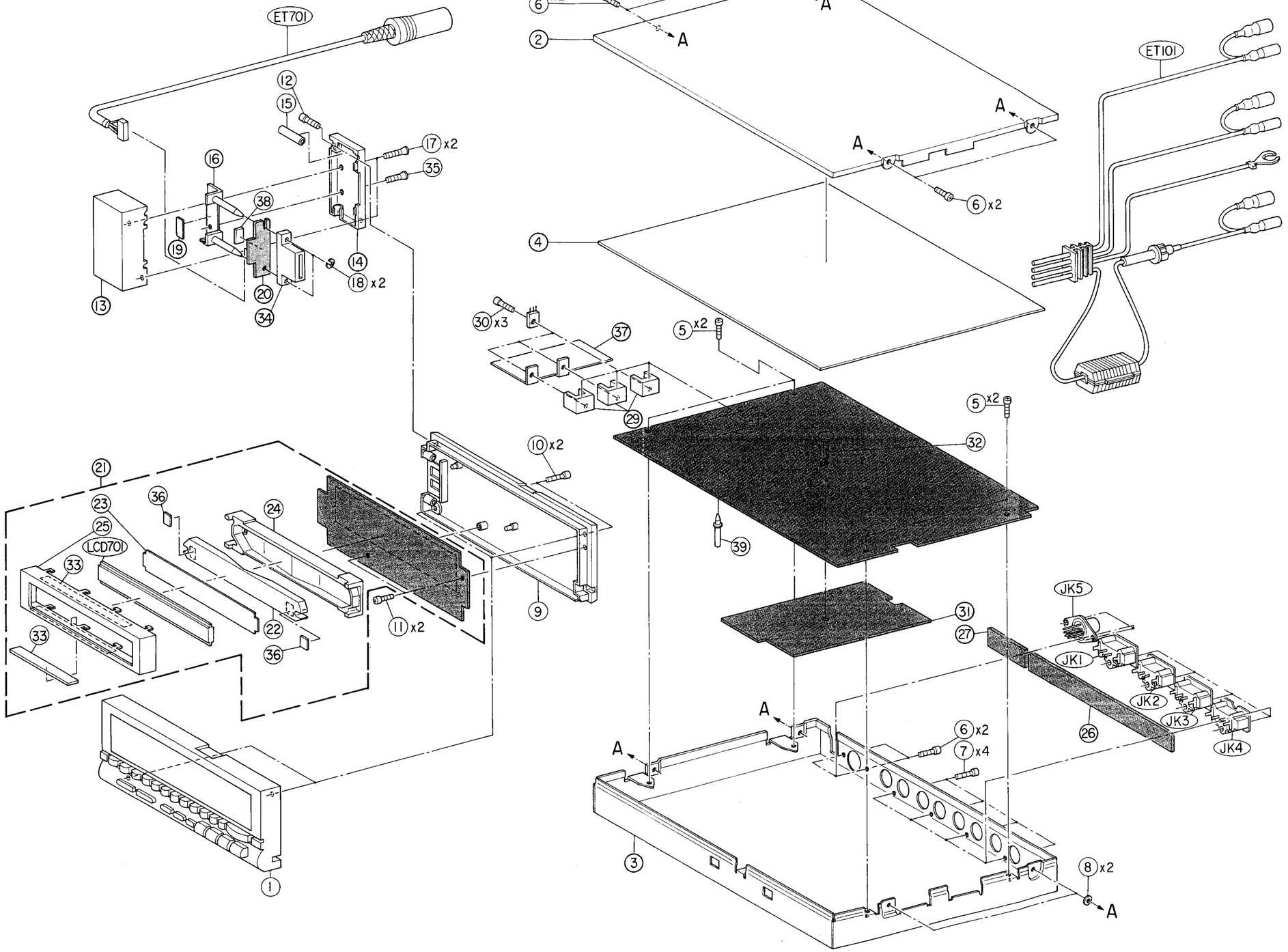
Cabinet Assembly Parts List

NOTE : The parts without parts list are not supplied.

Symbol No.	Index	Part No.	Description
1	5-B	13C21247W01	Assy., Nosepiece
5		03S44205G48	Screw, Pan (M2.6×5)
6		03S44205G34	Screw, Pan (M2.6×5)
7		03S68555F13	Screw, Pan (M3×10)
8		04A66026F04	Washer, Flat (M3.2)
9	4-D	15C21042W01	Bottom, Case
10	3-D	03S68555F24	Screw, Pan (M2×8)
11		03S68555F08	Screw, Pan (M2×5)
12	1-C	03S72235F40	Screw, Pan (M2.6×25)
15	1-C	43A40998P10	Spacer
17	2-C	03S63857F50	Screw, Countersink (M2×10)
18	2-C	04C42091G05	Washer, Ring E (M2)
22	4-B	61B21051W01	Lens, LCD
23	3-B	26A21054W01	Sheet, LCD
24	3-B	15B21052W01	Case, LCD
25	3-B	15B21053W01	Cover, LCD
30	2-D	03S71031F02	Screw, Bind (M2.6×8)
32	3-F	43T92160F02	Spacer, P.C.Board
33	4-A	75T25683W01	Rubber, Electric
35	2-C	03S43997P48	Screw, Countersink (M2×4)
36		14S20875W63	Insulator, Cover
38	2-B	14S20875W90	Insulator
39	3-E	09T84840F01	Lug, Style

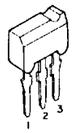
Symbol No.	Index	Part No.	Description

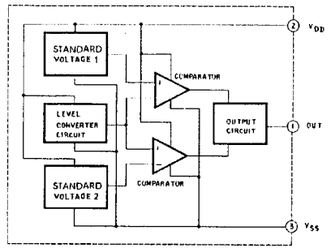
Exploded View (Cabinet)



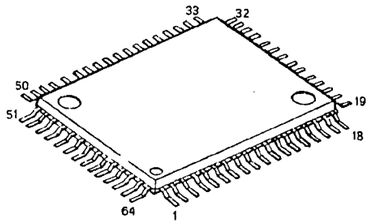
Semi - Conductor Lead Identifications

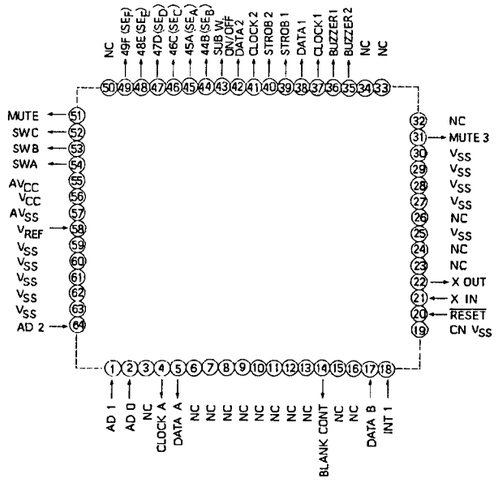
MN1280 : IC1



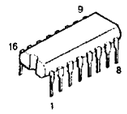


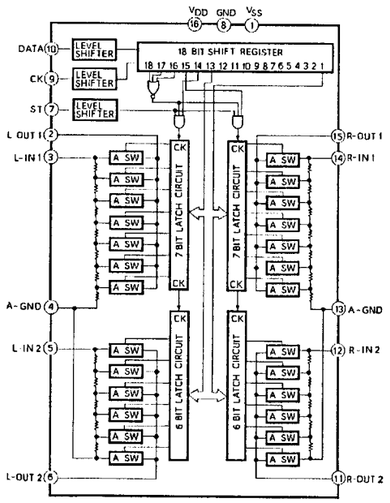
25116W01 : IC2



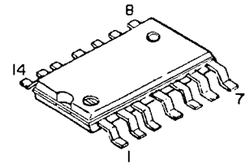


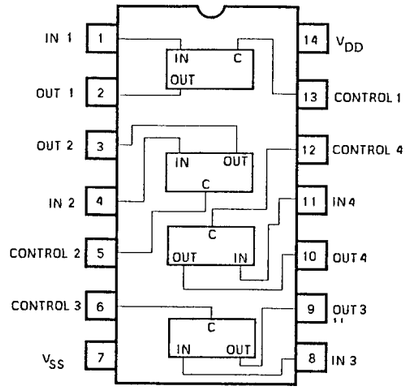
TC9154P : IC3~5





HD14066BFP : IC6, 509





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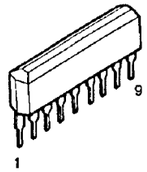

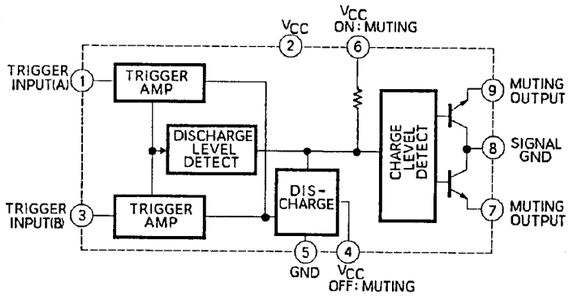

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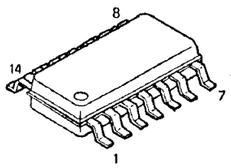
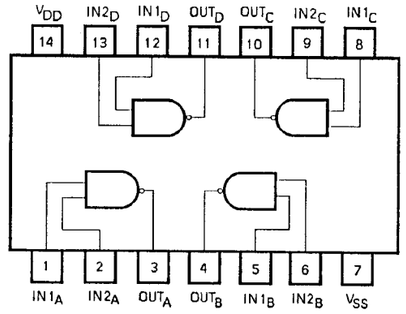
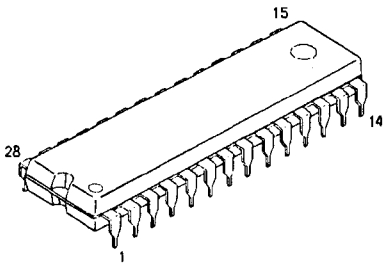
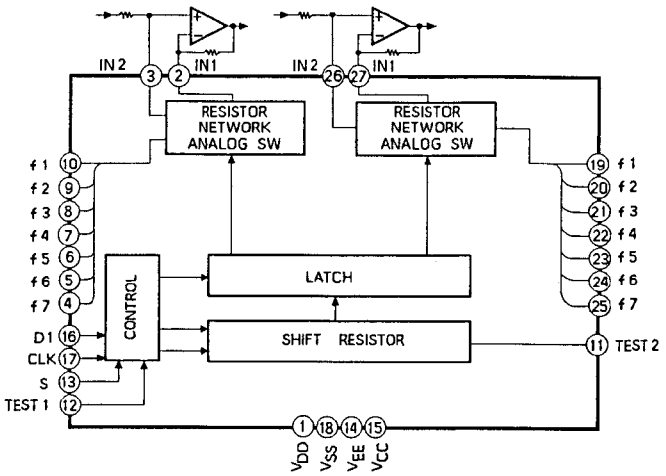


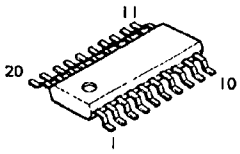


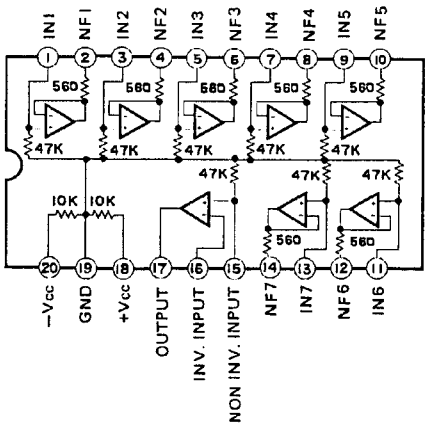
LC7522 : IC9, 10



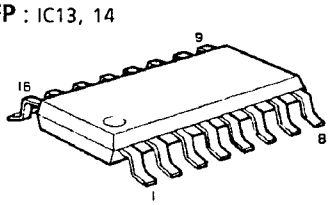


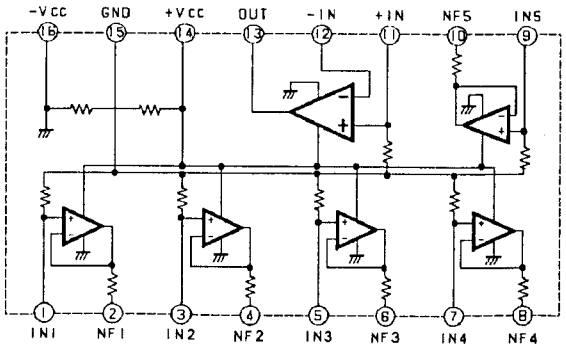
M5229FP : IC11, 12



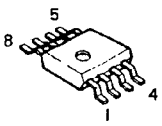


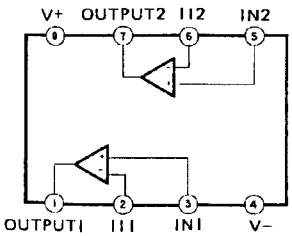
M5227FP : IC13, 14



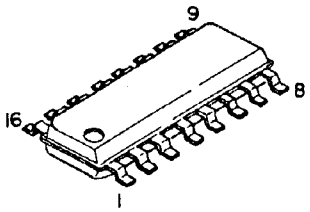


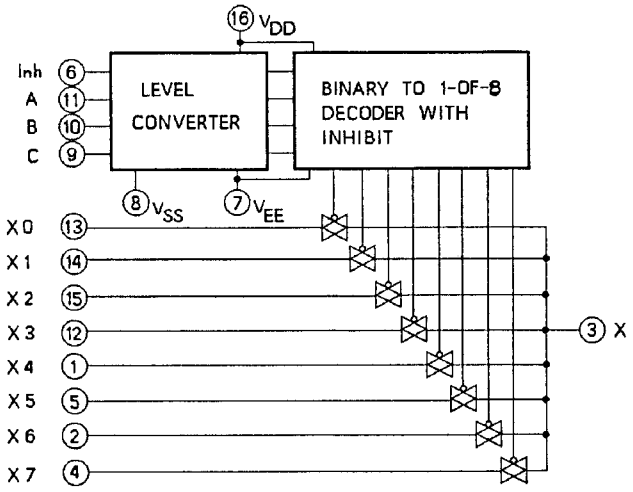
μPC4558G2 : IC15~20



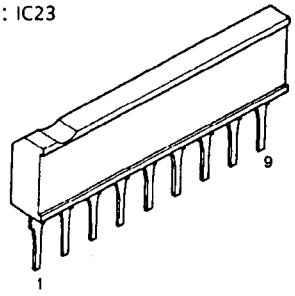


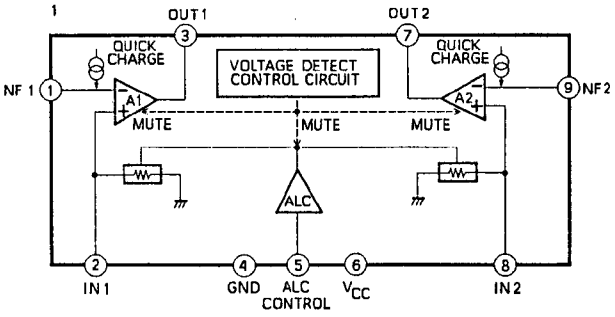
MC14051BFL1 : IC21, 22



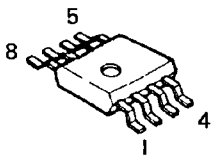


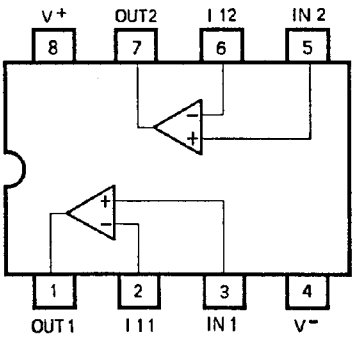
BA3306 : IC23



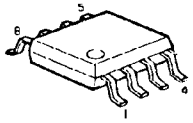


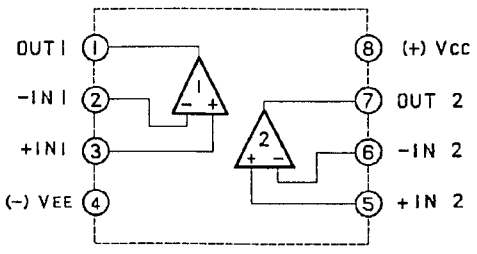
μPC4570G2 : IC24~30, 502, 503, 505





M5238FP : IC501





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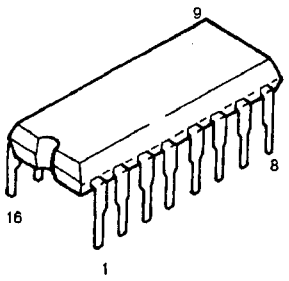
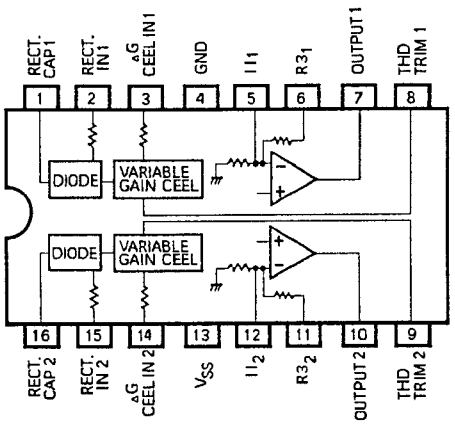
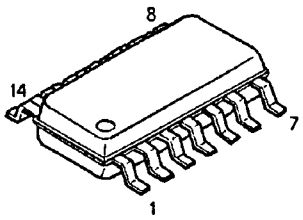
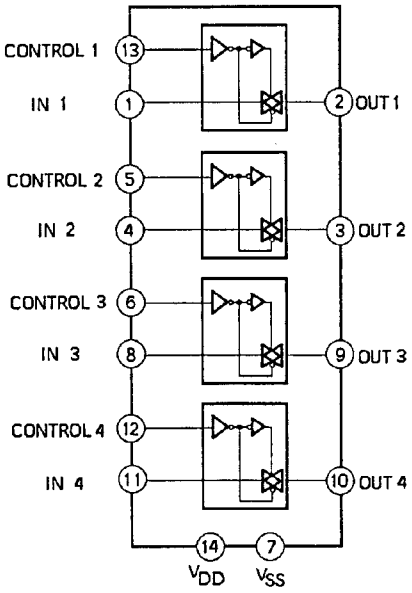


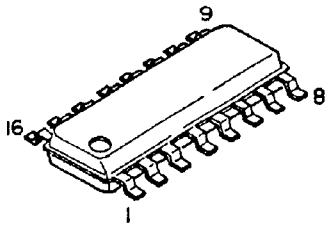


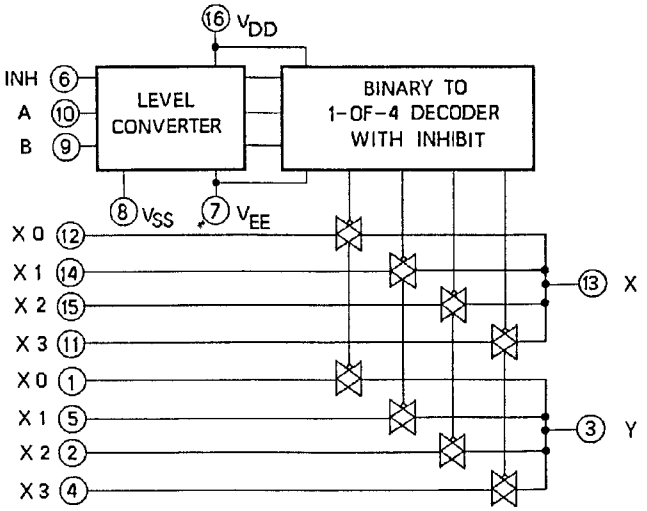
MC14066BFEL : IC506, 507





MC14052BFEL : IC508





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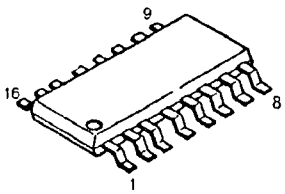

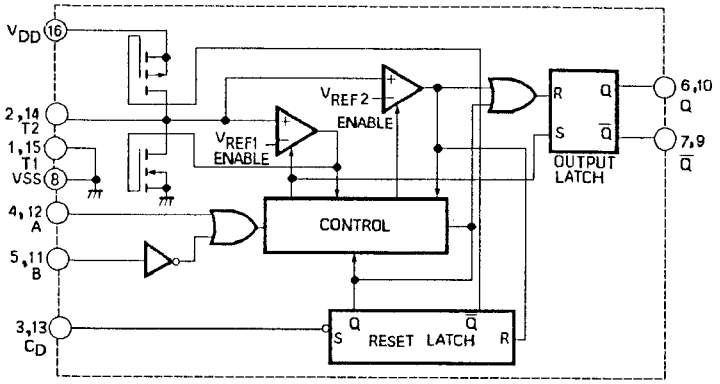

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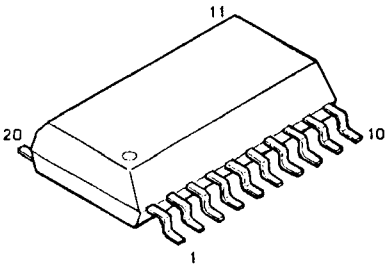

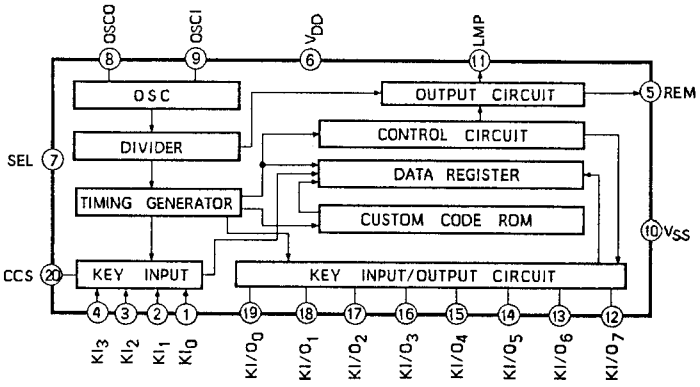
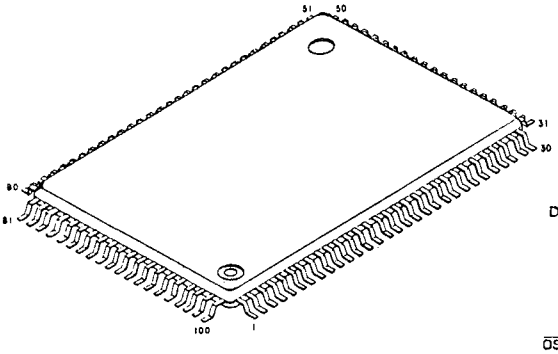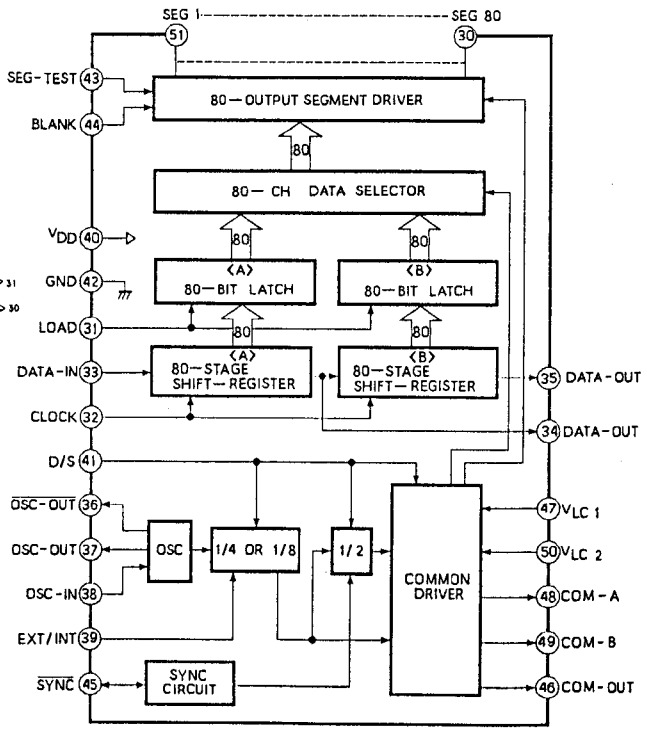
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